THE

EDINBURGH PRACTICE

OF

PHYSIC, SURGERY,

AND

MIDWIFERY;

PRECEDED BY

AN ABSTRACT OF THE THEORY OF MEDICINE,

AND

THE NOSOLOGY OF DR. CULLEN:

AND INCLUDING

UPWARDS OF SIX HUNDRED AUTHENTIC FORMULÆ,

FROM THE BOOKS OF ST. BARTHOLOMEW'S, ST. GEORGE'S, ST. THOMAS'S, GUY'S, AND OTHER HOSPITALS IN LONDON, AND FROM THE LECTURES AND WRITINGS OF THE MOST EMINENT PUBLIC TEACHERS.

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MIDWIFERY.

INTRODUCTION.

MIDWIFERY, as a fcience, is not confined to the mode of affifting women in the birth of children, but alfo comprehends the management of women both before and after delivery, as well as the treatment of the difeafes of children.

Midwifery is certainly almoft coëval with mankind. The firft *midwife* of whom mention is made under that name, affifted at the fecond labour of Rachael, the wife of Jacob. Another midwife is fpoken of in Genefis, at the lying-in of Thamar, who was delivered of twins. But the moft honourable mention of midwives is that in Exodus, when Pharaoh, king of Egypt, who had a mind to deftroy the Hebrews, commanded the midwives to kill all the male children of the Hebrew women; which command they difobeyed, and thereby obtained a recompence from God.

From all the paffages in Scripture where midwives are mentioned, it is plain, that women were the only practitioners of this art among the Hebrews. Among the Greeks alfo women affifted at labours. Phanarete, the mother of Socrates, was a midwife. Plato fpeaks at large of midwives, explains their functions, regulates their duties, and remarks that they had at Athens the right of propofing or making marriages. Hippocrates makes mention of midwives, as well as Ariftotle, Galen, and Aetius. This laft even frequently quotes a woman called *Afpafia*, who was probably a midwife. They were called among the Greeks Μαιαι or Ιατρομαιαι; that is to fay, *mamma*, or *grand-mamma*.

We are ftill better acquainted with the cuftoms of the Romans, and know that they employed women only. This may be deduced from the comedies of Plautus and Terence alone. We there fee that they are women only who are called to affift perfons in labour. Befides, Pliny, in his Natural Hiftory, frequently fpeaks of midwives and their duties; and names two, *Sotira* and *Salpe*, who had apparently the greateft reputation. Women were alfo employed after the fall of the empire; and it is certain, that, till lately, all civilifed nations have employed women only as midwives. This appears even from their names in many different languages, which are all feminine. There were, however, efpecially in great cities, furgeons who applied them-

felves to the art of midwifery, and made it their peculiar ftudy. They were fent for in difficult cafes, where the midwives found their incapacity; and then the furgeon endeavoured to deliver the woman by having recourfe to inftruments ufeful in thofe cafes, as by crotchets, crows-bills, &c.; but as thefe cafes happened but feldom, women remained in poffeffion of this bufinefs. It is certain, according to Aftruc, that Maria Therefa, wife of Louis XIV. employed women only in her labours; and the example of the queen determined the conduct of the princeffes and court-ladies, and likewife of the other ladies of the city. The fame author tells us, that he has been affured, that the epoch of the employment of men-midwives goes no further back than the firft lying-in of Madame de la Valiere in 1663. As fhe defired it might be kept a profound fecret, fhe fent for Julian Clement a furgeon of reputation. He was conducted with the greateft fecrecy into a houfe where the lady was, with her face covered with a hood; and where, it is faid, the king was concealed in the curtains of the bed. The fame furgeon was employed in the fubfequent labours of the fame lady; and as he was very fuccefsful with her, men-midwives afterwards came into repute; and the princeffes made ufe of furgeons on fimilar occafions; and as foon as this became fafhionable, the name of *acoucheur* was invented to fignify this clafs of furgeons. Foreign countries foon adopted the cuftom, and likewife the name of *acoucheurs*, though they had no fuch term in their own language; but in Britain they have more generally been called *men-midwives*.

In oppofition to this account, which is taken from Aftruc, that author tells us, that he is aware of an objection from Hyginus, who afferts that the ancients had no midwives; which made the women, through modefty, rather choofe to run the rifk of death than to make ufe of men on this occafion. For the Athenians, he adds, had forbid women and flaves to ftudy phyfic, that is to fay, the art of midwifery. A young woman, named *Agnodice*, defirous of learning this art, cut off her hair, dreffed herfelf in the habit of a man, and became a fcholar to one Hierophilus. She afterwards followed this bufinefs. The women at firft refufed affiftance from her, thinking fhe was a man; but accepted thereof when fhe had convinced them that fhe was a woman.

To this account our author replies, that the authority of Hyginus is by no means to be depended upon. His book is full of folecifms and barbarifms; and therefore cannot be attributed to any writer who lived before the fall of the empire; but muft have been the work of an author who lived when the Latin tongue was corrupted; that is, about the feventh or eighth century. The contradictions met with in this book alfo give room to fufpect that it is not the work of one hand, but of feveral. The authority of fuch a work, therefore, is by no means fufficient to deftroy

the teſtimonies of thoſe writers who affirm, that among the Greeks the care of lying-in women was committed entirely to others of their own ſex.

The art of midwifery ſeems not to have been ſo ſoon improved as that of phyſic. Hippocrates, though an excellent phyſician, ſeems to have been a very bad midwiſe. He was acquainted with no other kind of natural labour than that in which the head preſents; and condemns footling labour as fatal both to mother and child: he would have the children in ſuch caſes turned, ſo that the head may preſent. "If," ſays he, "the arm, or leg, or both, of a living child preſent, they muſt, as ſoon as diſcovered, be returned into the womb, and the child brought into the paſſage with its head downwards." For this purpoſe he adviſes to roll the woman on the bed, to ſhake her, and make her jump; he propoſes the ſame expedients to procure the child's delivery; and if they do not ſucceed, he adviſes to extract it with crotchets, and, whatever happens, to diſmember it.

From the time of Hippocrates to that of Celſus, who lived in the reign of the emperor Tiberius, we have no accounts of any improvements in midwifery; but this author gives two very uſeful directions. 1. In dilating the womb: "We muſt," ſays he, "introduce the fore-finger, well moiſtened with hog's lard, into the mouth of the womb when it begins to open, and in like manner afterwards a ſecond, and ſo on till all the fingers are introduced, which are then to be uſed by ſeparating them, as a kind of dilater, to diſtend the orifice, and facilitate the introduction of the hand which is to act in the womb. 2. Children may be delivered by the feet eaſily and ſafely, without crotchets, by taking hold of their legs. For this purpoſe we muſt take care to turn children, which are otherwiſe placed in the womb, with their head or feet downwards." It is true, Celſus ſpeaks of a dead child only; but it was eaſy to conclude from thence, that the ſame practice might be uſed with ſucceſs to deliver a living child. Nevertheleſs, this was not done; and, notwithſtanding the authority of Celſus, the former prejudice continued for a long time. Though Pliny, who lived under the emperors Veſpaſian and Titus, was not a phyſician himſelf, yet by condemning footling labour he atteſts the opinion of the phyſicians of his time. He aſſerts, as a known fact, that footling labour was a preternatural kind of labour: he adds, that children which came into the world in this manner were called *Agrippa*, that is to ſay, born with a great deal of difficulty.

But however common this opinion was, it was never univerſally received; and ſeveral phyſicians of character roſe up, who, without ſuffering themſelves to be dazzled with the common prejudice, or ſeduced by the authority of Hippocrates or Galen, recommended and approved of footling delivery. The queſtion then

was a long time undecided; and even in 1657, Riverius, a physician of reputation, condemned footling labour. Mauriceau also remarks, in the first edition of his book on the disorders of pregnant women, printed in 1664, that many authors were still of opinion, that when the child presented with its feet, it should be turned to make it come with its head foremost; but after having observed that it is difficult, if not impossible, to execute this, he concludes, "it is much better to extract the child by its feet when they present, than to run the hazard of doing worse by turning it." All practitioners, however, are now of the same opinion; and the knowledge of midwifery has been so much increased within this century, that it seems to have nearly attained its ultimate perfection, and its operations reduced almost to a geometrical certainty: and this, says Astruc, is not surprising; for, after all, the art of midwifery is reduced to the following mechanical problem, "An extensible cavity of a certain capacity being given, to pass a flexible body of a given length and thickness through an opening dilatable to a certain degree." This might be resolved geometrically, if the different degrees of elasticity of the womb, and strength and weakness of the child, the greater or lesser disposition of the blood to inflammation, and the greater or lesser degree of irritability of the nerves, did not occasion that uncertainty which physical facts constantly produce in all physico-mathematical questions.

The study of midwifery in Britain as a science is not of very ancient date. The first book published on the subject appeared in the year 1540, and was entitled *The Byrthe of Mankind*, otherwise named, *The Womans Booke*, by Thomas Raynold, physician. It underwent a second edition by Thomas Ray, a printer, whose name is not much known. It was adorned with prints, and went through several editions, and appears to have been held in high estimation. In 1653 the celebrated William Harvey published his treatise on generation; and afterwards engaging in the practice of midwifery, published his *Exercitatio de partu*. Some notice is also taken by Sydenham of the diseases incident to child-bed women, and of those of young children. About this time several other tracts on subjects relating to midwifery appeared, by Wharton, Charleton, Mayow, &c.; but till about the year 1634, Dr. Denham considers the treatise of Raynold already mentioned as being the standard. The appearance of the works of Ambrose Paré, which were now first published, depressed the reputation of Raynold's book; and Dr. Chamberlen, a celebrated physician, likewise applied himself about the same time to midwifery. He introduced an instrument into the art called a *forceps*, but which Dr. Denham supposes to have been a *vectis*.—He had three sons who likewise practised midwifery, and, as well as himself, obtained considerable character; and one of the young men

went over to Paris with a view to sell the secret, or advance his fortune by a practice which he had found so successful in England. In this, however, he was disappointed; the first case in which he was engaged proved unsuccessful, and he suffered much reproach in consequence. Returning to England, therefore, in 1672, he published a translation of Mauriceau's midwifery, which continued in great estimation for many years.

Dr. Willoughby, who wrote a treatise on midwifery, quoted in manuscript by Dr. Denman, complains of the practice of midwives about this time. He says, "I haue read many bookes, with all the late writers in midwifery, and I do perceiue that they all follow one common roade, taking their seueral scheemes and figures one from another.

"In seueral of these scheemes uarious things may be perceiued which will be troublesome to the labouring woman, which a judicious practicioner will not followe. Let midwiues mark whatt hath been written in my obseruations, let them consider diligently the seueral reportes not faigned, or the surmised thoughtes, nuctors, or man's fantasie, sitting and meditating in his studye, but which really haue been performed in the trauailing woman's chambre.

"From mine and their directions let midwiues choose the best and facilest waies of relieuing women in affliction, and to decide all disputes, let reason be the judge, let experience argue the dubious points of practice; and, after a full debate, let unspotted truth recorde to succeedinge times what is most fitt to be followed and used, &c."

This is a specimen of his illustration. "Let midwiues obserue the waies and proceedinges of nature for the production of her fruit on trees, or the ripening of walnutts and almondes, from theire first knotting to the opening of the huskes and falling of the nutt; the greene huskes sticking so close that it is not possible to separate the huske from the shell, whilest it is unripe; but as the fruite ripeneth the huske choppeth and with a fissure openeth, and by degrees separateth the fruite without any enforcement.

"An egge representeth the wombe: now the henne with keeping the egge warm doth breed the chicken, which when it comes to maturitie doth chip the shell, and is by degrees hatched without injurie. These signatures may teach midwiues patience, and persuade them to let nature alone to performe her owne worke, and not to disquiet women by their strugglings, for such enforcements rather hinder the birthe than any waie promote it, and oft ruinate the mother and usually the childe; and let midwiues knowe that they be nature's seruantes, &c."

It seems Dr. *Willoughby's* practice was not much different from that of the present time. He divides labours into two kinds only, natural and unnatural. "The particular rules," says Dr. Den-

man, " I cannot pretend to defcribe in this place ; but the following letter, which he has quoted from a fcarce work, correfponds fo nearly with an obfervation it was my fortune to make fome years before I faw this manufcript, that I may be excufed relating it.

' Referam hoc cafu, quid beatæ meæ conjugi acciderit. Tertio fœtu gravidam, nono prægnationis menfe, labores parturientium arripiunt circa noctem. Mox rupta aqua (ut hic mulieres loqui amant) extra genitale, infantuli manus propendit. Ubi obftetrix advenifTet, uxorem meam in fedili collocavit, eamque ad continuos conatus (me nolente nec inftigante natura) adegit. Cum vero res eo modo non fuccederet, meamque conjugem fupra fedem continuo detineret, ac diris cruciatibus illapfum ex uteri cervice manum brachiumque retrudere niteretur, quo fœtum ad exitum commodius difponeret. Ego præ dolore charæ meæ conjugis impatiens, ac indefinenter obftetricem admonens, ne quidem elapfi membri reductionem in uterum cogitaret poffibile, multo minus moliretur, fecundam obftetricem accerfiri juffi, præfertim cum uxor mihi nunciaret, quod obftetrix eam dilaceraret per illam præconceptam ac miferam elapfi membri repulfionem. Cum infequenti die, obftetrix altera veniffet, illa manus ad opus applicans remque diligenter explorans, uxorem meam in lectum depofuit, mandavitque ut fe quietam detineret, nullofque conatus excitaret, nifi quando natura eam fui admoneret officii.

' Interim obftetrix illa prudens et expertiffima prædixit mihi amicifque præfentibus, uxorem meam non ante parturam, quam fœtus in utero, ex indebito fitu, conatibus ftrangularetur, quod eventus docuit. Multiplicati funt labores parturientis, et fœtus inflexo ad dorfum capite (falva matre) prodiit in lucem*.' "

Dr. Willoughby was the grandfon of Sir Francis Willoughby, fo much celebrated in the time of Queen Elizabeth ; and Dr. Denman is of opinion, that the fame and fortune acquired by Dr. Chamberlen, induced fo many gentlemen as now practifed midwifery to undertake the ftudy of it, and to make ufe of inftruments as he did. Among thefe was Dr. Bamber ; but others attempted to raife their reputation by a quite contrary practice. In 1723 Dr. Maubray publifhed a book on midwifery, entitled *The Female Phyfician, or the Whole Art of New Improved Midwifery*, in which he violently declaims againft the ufe of inftruments ; and next year he publifhed an appendix, under the title of *Midwifery brought to Perfection*, in which he fets forth in a pompous manner the improvements he had made. This, however, was no more than a fyllabus of his lectures, he having been the firft public teacher of midwifery in Britain.

Dionis's Midwifery made its appearance in 1719, and Deventer's

* Novus exortis hominus et animalium. Ayton. Everard.

in 1729. The latter, in Dr. Denman's opinion, was more esteemed than it deserved, as he generally condemns the use of instruments; notwithstanding which, he thinks it a considerable acquisition to the science in this country.

In 1727 appeared Dr. Simson's work, entitled *The System of the Womb*; "a work (says Dr. Denman) of sufficient ingenuity, but not of much use in practice, even if his theory had been true." Chapman's *Treatise on the Improvement of Midwifery* appeared in 1733. He was the second public teacher of midwifery in London, and was the first who described the *forceps*; the description appearing in the third volume of the Edinburgh Medical Essays. His work contains many useful observations. Next year Dr. Hody published a collection of cases in midwifery, written by Mr. William Giffard. They are 275 in number, occurred in his own practice, and appear to be written with great fidelity. He also gave a plate of the forceps; and, in Dr. Denman's opinion, was among the first who asserted that the placenta might be attached over the *os uteri*. In 1736, Thomas Dawke published a book, entitled *The Midwife rightly Instructed*; and, the following year, *The Midwife's Companion*, by Henry Bracken: but these, as well as some others which made their appearance about the same time, are of no importance.

About the same time also, Sir Richard Manningham quitted the profession of pharmacy, and applied to the study and practice of midwifery. He had received the honour of knighthood in 1730; and in 1739 he established a small hospital or ward for lying-in women, which was the first thing of the kind in the British dominions. Here also he gave lectures; and at the same time qualified his students for practice. He became very eminent in his profession, which he exercised with great humanity, and was accounted a man of great learning. He published a work, entitled *Compendium Artis Obstetricæ*; and another, called *Aphorismata Medica*, relating also chiefly to the art of midwifery. In 1741, Sir Fielding Oulde of Dublin published *A Treatise of Midwifery*; the most important parts of which are some observations on the continued thickness of the uterus during pregnancy, with his description of the manner in which the head of the child passes through the pelvis at the time of the birth; the truth of which observations have since been universally acknowledged.

From this time the English, according to Dr. Denman, might be said "to have been in full possession of the subject; all the books written in the neighbouring countries being translated, public lectures given, and an hospital established for the further improvement of the art: and as all the books printed since that time may readily be procured, every gentleman has an opportunity of forming his own opinion of their respective merits. But the College of Physicians (adds he), having been pleased, in the year

1783, to form a rank in which those who dedicated themselves to the study of midwifery should be placed, I trust that future accounts will be more correct; and that this measure adopted by the college will promote the public benefit, by confining the industry and abilities of one class of men to this branch of the profession."

In Scotland, though there has for a long time been professors of midwifery, yet the surgeons likewise practise that art as well as their own. Several approved treatises on the subject have appeared in this country; particularly a system by the late Dr. Smellie, which has been long held in the highest estimation in both kingdoms; and, within these few years, several excellent performances by Dr. Alexander Hamilton of the university of Edinburgh: and, indeed we may venture to affirm, that both theory and practice of midwifery are better understood in Britain than in any other part of the world.

THEORY OF MIDWIFERY.

PART I.

THE ſubject of this Part comprehends, in a particular manner, the anatomical ſtructure of the pelvis, and other parts concerned in the formation of the child, the theories of conception, generation, &c. of the nutrition, growth of the fœtus, and of the powers by which it is expelled. Of all theſe ſome account muſt here be given; but as the particular deſcription of the pelvis belongs peculiarly to this ſubject, we ſhall begin with an account of its various conformations, as they in a great meaſure affect women at the time of child-bearing, and very particularly contribute to the eaſe or difficulty of the labour.

CHAP. I. OF THE FEMALE PELVIS, AND ITS CONTENTS.

SECT. I. *Of the* PELVIS.

DR. DENMAN obſerves, that the term *pelvis* has been applied indiſcriminately to the inferior cavity of the abdomen, and to the bones which form that cavity; but he thinks it moſt proper to confine it to the bones, and to diſtinguiſh the hollow by the name of the cavity of the pelvis. In the ſtate of infancy, the pelvis is compoſed of five or ſix bones, moſt of which in the fœtus are ſoft and flexible; ſome of them being, in a manner, quite cartilaginous; while the edges of others are found covered with a ſubſtance of the ſame kind. This conſtruction is thought by ſome to facilitate delivery, as the pelvis of the fœtus can thus change its figure like the cranium; but M. Baudelocque thinks this an erroneous opinion, "conſonant neither to reaſon nor experience."

In the adult, the pelvis conſiſts only of four bones, viz. the *ſacrum*, the *os coccygis*, and the two *oſſa innominata*. Theſe be-

ing defcribed in books of *Anatomy*, we fhall here content ourfelves with obferving, that an anchylofis is not unfrequently formed between the os facrum and the offa innominata; and fometimes an imperfect joint in confequence of their feparation; whence the part is very much weakened, and the perfon ever afterwards walks with difficulty.

The os coccygis in infancy is cartilaginous; but in the adult it is compofed of three, or more frequently of four bones, connected by intermediate cartilages, the uppermoft of which is fomewhat broader than the lower part of the os facrum. In fome fubjects thefe bones coalefce, and form a fingle one: in others an anchylofis is formed between the facrum and os coccygis; in confequence of which the latter is fhortened and turned inwards, fo as to obftruct the head of the child in its paffage through the pelvis But the impediment thereby occafioned at the time of labour may be overcome by the force with which the head of the child is propelled, and the os coccygis again feparated from the facrum with a noife loud enough to be diftinctly heard. In general, however, fome regreffive motion is preferved between the bones of which the os occygis is compofed; and that which is produced between the *facrum* and *os coccygis*, when the latter is preffed by the head of a child paffing through the pelvis, occafions a confiderable temporary enlargement of the inferior aperture of the pelvis. Any lateral motion is prevented by the infertion of the *coccygæi* mufcles, part of the *levatores ani*, and fome portions of the facro-fciatic ligaments into the fides of the *os coccygis*.

The *os innominatum*, in a woman of the ordinary fize, is about fix inches broad from the anterior to the pofterior fuperior fpine. The height is nearly fix inches and a half from the anterior fpine to the bottom of the tuberofity of the ifchium, and feven and a half if taken from the middle of the crifta of the ilium; and hence we may in fome meafure be enabled to determine the depth of the cavity of the pelvis laterally from the fuperior to the inferior ftrait.

"The offa pubis," fays M. Baudelocque *, "are joined together by means of a fubftance which has always been defcribed by the name of cartilage, though it differs as much from that as from a ligament. According to fome anatomifts, each *os pubis* is covered by its own cartilage. Their junction is not a true fynchondrofis; but a clofe articulation, which admits only of infenfible motions. By carefully examining this fymphyfis, we obferve that each os pubis is really covered by a cartilage at its anterior extremity; that this cartilage is thicker before than behind, and in its fuperior and inferior parts than in the middle of its

* See his Syftem of Midwifery, tranflated by Mr. Heath.

length; that these bones, thus covered, are bound together by means of a substance which seems ligamentous, and whose fibres, which are mostly transverse, go from one to the other; that these fibres are so disposed, that the deepest are the shortest, and the most superficial the longest; that they leave between one another a kind of meshes filled with reddish corpuscles, very like those which are seen about the moveable articulations, and which are commonly thought to be synovial glands. We observe further, that this fibrous and ligamentous substance does not occupy the whole thickness of the symphysis, and does not bind the bones together through the whole extent of the surfaces presented by their anterior extremities; but that there exists a true articulation of the species known by the name of *arthrodia*. If we open this symphysis towards the inside of the pelvis, after a cellular tissue very thin and loose, which we meet with first, we discover a capsular membrane, whose most apparent fibres are transversal; afterwards two cartilaginous facettes, smooth, polished, and moist, from six to eight lines long and two broad, of a figure a little semilunar, lightly convex on one bone, and concave on the other. These facettes comprehend nearly the middle third of the length of the symphysis and the posterior third of its thickness.—This symphysis then presents in one third of its extent, or thereabouts, a true articulation; and in the rest a *syneurosis* and *synchondrosis* at the same time.

"This compound and articular substance, being detached from the bones, forms a kind of wedge, whose base constitutes the anterior part of the symphysis, and its edge the posterior; so that these bones seem to touch towards the inside of the pelvis, and appear separated to the distance of several lines without: the base of this kind of wedge is generally from four to six lines broad towards the middle of the length of the symphysis, and from eight to ten in the inferior and superior parts, while the edge at most does not exceed one line. Its thickness, taken according to that of the bones, is greater above than below; where this substance, become thinner, forms what is called the triangular ligament.

"This first means of union was not sufficient to give these bones the firmness necessary for the free exercise of the functions to which the pelvis is destined. It is covered and fortified in all parts, but especially before, by bundles of ligamentous and aponeurotic fibres. Independently of the thick and very strong ligamentous structure which forms the fore-part of the symphysis, we observe bundles of tendinous fibres which decussate each other a thousand ways, some of which arise from the interior *graciles* and the external *obturators*, and others from the external portions of the inguinal rings. The triangular expansion which terminates the symphysis inferiorily, and which forms the top of

the arch of the pubes, seems to have other uses than that of binding the bones together.

"The manner in which the *os sacrum* is connected with the *ossa innominata*, differs considerably from that in which the *ossa pubis* are joined. Here each articular facette is covered by a true cartilaginous layer, and there are inequalities on each side, which mutually receive one another, while nothing of that kind is observed in the junction of the pubes; neither are there in any part of these articular facettes any of the transverse fibres which go from one bone to the other in the *ossa pubis*: these articulations, therefore, derive all their strength from the great numbers of ligaments which surround them. Most of these are very short, and do not extend beyond the edges of the articular facettes: but there are others longer to be seen above, below, and behind these symphyses.

"The *os sacrum* is not only articulated with the ilia, but with the spine and coccyx. It is joined in three places to the spine: 1. By an oblong and cartilaginous impression in the middle of the basis, which unites it to a similar impression in the body of the last *lumbar vertebra*, by means of an elastic substance. 2. By two little articular masses fixed in the posterior edge of that first impression, and which answer to similar substances in the vertebra above mentioned.

"The elastic substance which unites the middle of the base of the sacrum to the spine, is entirely similar in its nature to that seen between the bodies of all the vertebræ. Being very thick before and thin behind, the angle resulting from the disposition of the articular facettes of these two parts is rendered more obtuse. This *sacro-vertebral* junction is surrounded by an infinity of ligaments, some without and others concealed within the spinal canal. All motion is not prohibited by this kind of junction; but, as it only depends on the compression of the intermediate substance, it can but be very small. The motion between the body of the last lumbar vertebra and the base of the sacrum, is never extensive enough to make any alteration in the degree of acuteness of the angle which results from their junction; but the convexity of the lumbar column may be augmented or diminished by means of a compound motion, formed of those which take place between each of the lower lumbar vertebræ and between the lower ones of the back. This augmentation or diminution of the convexity, in proportion as the trunk is bent backward or forward, or by raising or lowering the breech when the woman lies on her back, deserves particular attention in the practice of midwifery; for thus we may make a favourable change in the direction of the axis of the pelvis, relatively to that of the trunk, to that of the uterus, and in the direction of the expulsive forces of the latter, which may be rendered more or less

efficacious according to circumſtances, by making the woman preſerve a proper attitude.

"The junction of the coccyx with the ſacrum permits the former to move, and yield to the different degrees of preſſure it undergoes in different circumſtances. The mobility is very great in youth; but diminiſhes inſenſibly as the patient grows older, and at laſt is totally loſt. If entirely loſt, or conſiderably diminiſhed, before a woman is paſt child-bearing, it produces ſometimes, though very rarely, an obſtacle to delivery. The connections of the pelvis with the inferior extremities are not of much importance in midwifery. The natural courſe of labour cannot be diſturbed by any fault in their configuration when the pelvis itſelf is well formed; but in general they are conſequences of a deformity of it. They are *enarthroſes*, which allow of motion in every direction."

The pelvis is divided into two parts, called the *upper* and *lower*, by a ridge ſometimes elliptical, and ſometimes of other ſhapes. The breadth of the upper part from the anterior ſuperior ſpine of one ilium to another, is uſually eight or nine inches, and its depth from three to four. At the back part of it is the projection of the lumbar vertebræ, and at the ſides the *iliac foſſæ*: The lower part forms a kind of canal, whoſe entrance and outlet are ſomewhat narrower than the middle; whence it has been diſtinguiſhed into the *ſuperior* ſtrait, the *inferior* ſtrait, and an excavation.—The *ſuperior* ſtrait is a kind of circle forming the entrance of the canal; its form, however, is various, as is alſo its obliquity from behind forwards. M. Levret has fixed this laſt at an angle of from 35 to 40 degrees.

The ſmalleſt diameter of this ſtrait is generally about four inches, extending from the middle or the projection of the ſacrum to the ſuperior and internal part of the ſymphyſis of the pubes. The other diameter is uſually about an inch longer, extending from one ſide of the ſtrait to the other. The oblique diameters are a medium betwixt the two former, extending diagonally from each acetabulum to the ſacro-iliac junction of the oppoſite ſide. The pelvis is cut at right angles by the two former, and into acute ones by the latter; but the diameters, conſidered in relation to delivery, are ſomewhat different from thoſe juſt mentioned, ſome changes in them being occaſioned by the ſoft parts within the pelvis.

The inferior ſtrait is in general ſmaller, and of a more irregular figure than the other, being not formed, like it, entirely of bones. The edge, rendered unequal by three deep and large notches, is completed behind and at the ſides by the ſacro-iſchiatic ligaments, forming a kind of circular notch before, called the *arch of the pubes*. The diameters of it are commonly about four inches in length; and though the tranſverſe, which extends from

one *ischium* to the other, be often a little longer than that which extends from the fore to the back part, it muſt be reckoned the ſmalleſt with regard to delivery; becauſe the latter augments in proportion as the point of the coccyx recedes from the pubes. We muſt alſo remember, that the great diameter of the inferior ſtrait is parallel to the ſmalleſt of the ſuperior, and that it croſſes the longeſt of that ſtrait at an angle more or leſs acute; and by carefully attending to this, we may, in many caſes, with the finger alone, when properly directed, remove obſtacles which could not have been overcome even by means of inſtruments, without expoſing the child to great inconveniences. It is likewiſe favourable to delivery that the middle part of the pelvis is a little larger from before backwards than the ſtraits; which diſpoſition proceeds from the curved figure of the *os ſacrum*.—On one ſide this curve diminiſhes the numerous and long-continued frictions which the child's head would neceſſarily undergo if the pelvis were equally broad in all its parts; and on the other ſide it is equally uſeful in preventing the effects of a long and forcible preſſure on the ſacred nerves, which a flat form of the ſacrum would have rendered unavoidable during the whole time of the paſſage of the head. The cavity of the pelvis is commonly from four to five inches deep behind, three and a half at the ſides, and one and a half at moſt before.

The arch of the pubes, which at the top is only from one inch and a quarter to one and two thirds in breadth, augments gradually as it deſcends; ſo that at the bottom its ſides are three inches and a half, or even four inches, ſeparated from one another; that is, if we take the line which is looked upon as the tranſverſe diameter of the inferior ſtrait for its baſe; the height being about two inches.

The axis of the ſuperior ſtrait of the pelvis cannot well be determined; but that of the inferior one, with regard to delivery, muſt be conſidered as paſſing through the centre of the opening of the vagina dilated by the child's head. Its direction is then ſo much inclined from behind forward, that its ſuperior extremity traverſes the lower part of the firſt falſe vertebra of the ſacrum, and croſſes that of the other ſtrait at a very obtuſe angle.

Hitherto we have treated only of that form of the pelvis which is moſt favourable for delivery: but the proportions and forms of it are various; and as it differs from thoſe above deſcribed, the delivery is attended with more or leſs difficulty.

The defects of the pelvis, with regard to facility of delivery, conſiſts in its being either too large or too ſmall. At firſt ſight it might be imagined, that a large pelvis would make the delivery more eaſy, as the head of the child will thus be expoſed to leſs friction, be more eaſily expelled, and the labour be leſs painful. But women who have a very large pelvis, are ſubject to thoſe in-

conveniences which arise from an obliquity of the uterus, or even to a descent of it altogether; especially in the time of labour, when that viscus, being already charged with the weight of the child, is entirely subjected to the expulsive power of the abdominal muscles. In women who have had several children, the uterus is but weakly retained by its ligaments; and in subsequent pregnancies it descends still lower, until at last it rests on the margin of the pelvis. This, however, does not take place before the conclusion of the first four or five months: before that time its weight lies principally on the extremity of the rectum; and by this, as well as by its bulk, the discharge of the urine and fæces is impeded, and accidents sometimes ensue from the compression of the veins which pass through the pelvis. These symptoms sometimes vanish about the middle of pregnancy, but reappear towards the latter end; because the head of the child is early engaged in the pelvis, and acts on the same parts that the whole uterus did before. Besides all these accidents, there are others which may take place at the time of delivery; so that, upon the whole, it cannot be reckoned any real advantage for a woman to have a large pelvis.

The accidents, however, which arise from too great a size of the pelvis, are much more easily remedied, and in themselves less dangerous, than such as arise from its narrowness. This defect may be considered as either relative or absolute. The former arises from an excess of size in the head of the child; the latter from a bad conformation of the pelvis itself. The absolute narrowness of the pelvis rarely affects all parts of it at once: it is generally found only in one of the straits; in which case, the other is usually of the natural size, nay, sometimes even larger than natural. The fault is more frequently in the superior than the inferior strait; and it is remarkable, that it most commonly affects the strait in its small diameter; very rarely in its transversal; sometimes affecting only one side. In the inferior strait it is generally caused by the approximation of the tuberosities of the ischia.

"It is easy," says M. Baudelocque, "to determine why the superior strait is more frequently deformed than the inferior; and why it is almost always between the pubes and sacrum that it is defective respecting delivery. If we consider the direction of the forces which act on the pelvis of ricketty children, in whom the bones are at the same time softer and more loosely connected than in the natural state, we shall see, that the greater part of those forces tend to carry the base of the sacrum forward and the *ossa pubis* backwards. Whether the child be standing or sitting, if we attend to the direction of the spinal column, we shall see that the weight of the body must insensibly push the base of the sacrum towards the pubes; and that it acts in the same manner on the

inner parts of the acetabula, which ferve as a fulcrum to the inferior extremities when the child is ftanding or walking. The *offa pubis*, particularly in thefe latter cafes, muft be pufhed towards the facrum; in fuch a manner, however, that their pofterior extremities often approach a little nearer to the projection of the bafe of that bone than their anterior extremities, or the fymphyfis. If the fuperior ftrait does not conftantly prefent the fame figure in deformed *pelvifes*; if it is fometimes larger on one fide than the other; if one of the acetabula is nearer to the facrum, while the other approaches lefs; if the fymphyfis of the pubes is removed, in many cafes from a line which would divide the body into two equal parts—it is becaufe the rickets have not equally affected all the bones of the pelvis, nor equally hurt all their junctions; and becaufe the attitude which the child takes in walking or fitting may change a little the direction of the compreffing powers juft mentioned. The weight of the body may alfo equally hurt the form of the inferior ftrait, but varioufly, according to the moft ufual attitude of the child, and the direction taken by the fpinal column. For example: If it fits much, the facrum will be more curved, and the ftrait more contracted from before backwards: in this attitude, if it inclines habitually to one fide, one of the ifchiatic tuberofities will be thrown inwards, the *os ilium* will be more elevated, &c. The action of the mufcles which are attached to the pelvis, the preffure of clothes, and that which the arms of the nurfe exert on this part, contribute alfo fomething to the deformities in queftion, but much lefs than the weight of the trunk: whence we fee, of what importance it is to keep ricketty children in bed, and leave them at liberty; inftead of obliging them to walk, to fit up, or have them conftantly in the arms, as is done almoft every-where."

The dimenfions of the pelvis itfelf vary no lefs than the contour of the ftraits. If the diameter of fome, taken from the pubes to the middle of the projection of the *os facrum*, be only a few lines; in others the defect is feveral inches, fo that fcarcely a fingle inch is left between thefe bones. Thefe extremes, however, are not frequently met with; and the latter of them is never fo great in the inferior as in the fuperior ftrait. On comparing the dimenfions of a well-formed pelvis with thofe of a child's head, we fhall find that the former might admit of being fome inches lefs in circumference, and yet be large enough for an eafy delivery. The circumference of a common head is ufually no more than ten inches and a quarter, or ten and a half. The firft degree of narrownefs in any pelvis therefore muft be, when each diameter is fomething lefs than three inches and a half. M. Baudelocque fays, that he has feen pelvifes in which the diftance of the pubes from the facrum fuperiorly was no more than fix or eight lines; and he had in his poffeffion two others, in one of which the

diſtance from the back of the right acetabulum to the projection of the ſacrum was only three or four lines, and the other had but 14 lines between that projection and the ſymphyſis of the pubes.

The narrowneſs of the pelvis is to be accounted one of the principal cauſes of difficult delivery.—When an opening of only three inches and a quarter is left, the labour muſt be more difficult than when it is three inches and a half, as the number of frictions which the child's head muſt undergo are then more numerous and frequent. When there is an opening only of three inches, the labour muſt be ſtill more difficult; but ſtill there are inſtances of natural deliveries without any aſſiſtance, notwithſtanding the diſproportion betwixt the ſize of the child's head and pelvis. This may even happen when the diameter of the pelvis is ſtill ſmaller, ſuch as two inches and three quarters, or two and a half. M. Solayres obſerved in a caſe of this kind, that the head was lengthened in ſuch a manner, that its longeſt diameter was eight inches all but two lines, that which goes from one parietal protuberance to the other being reduced to two inches five or ſix lines; and M. Baudelocque has obſerved ſimilar changes in the form of the head, and the reſpective lengths of its diameters at the inſtant of birth, where the child was equally deformed, the long diameter being ſeven inches, and the tranſverſe one two inches ſix or ſeven lines. The children were in good health; and the day after their birth their heads wanted very little of the uſual proportions.

But when the ſmall diameter of the pelvis is leſs than two inches and a half, the head of the child cannot paſs; and then ſome of the dangerous chirurgical methods muſt be undertaken, which frequently prove fatal both to the mother and child. Even when the pelvis is two inches and a half in diameter, the natural delivery is not always without danger to both; as, on one hand, the ſoft parts which cover the pelvis are ſubjected to ſuch violent preſſure that they become inflamed, exquiſitely painful, and at laſt are even threatened with gangrene; on the other, the bones of the child's cranium riding over one another, or ſometimes fractured and depreſſed, wound the brain, and produce internal extravaſations, which generally prove fatal. The bad conſequences reſulting from a deformed pelvis, ſhew themſelves ſooner or latter, according as the ſuperior or inferior ſtate is vitiated. When both are ſo, the obſtacles to the birth begin to manifeſt themſelves as ſoon as the labour begins; and ſometimes thoſe at the ſuperior ſtrait are ſo great, that the expulſive powers are exhauſted, and the head ſtops there; or if it be puſhed further into the pelvis, and ſtopping there, it will remain incapable of being delivered without the aſſiſtance of art. The head cannot paſs this ſtrait without being in a conſiderable degree elongated; and when it enters the pelvis, the cavity being there ſufficient for it, it naturally returns

to its former dimenſions, at leaſt in part, and more or leſs ſo as it ſtays a longer or ſhorter time. The ſame conformation of the head, however, which enabled it to paſs the firſt ſtrait, is ſtill more neceſſary to enable it to paſs the ſecond : and hence the ſymptoms which had come on with the firſt pains, ſometimes diſappear in a great meaſure during the time that the head ſtays in the evacuation ; but increaſe to a greater degree than ever when the ſtrong labour comes on.

When the ſuperior ſtrait alone is contracted, the head advances at firſt with great difficulty ; but as ſoon as the parietal protuberances have cleared the ſtrait, the other parts of the pelvis being relatively or abſolutely larger, the head paſſes them with ſo much eaſe, that the delivery is frequently terminated by a few pains. The contrary is obſervable when the fault is in the inferior ſtrait, if the firſt be of the uſual ſize. The head then deſcends eaſily into the lower part of the pelvis ; but cannot proceed any further, until it overcome the obſtacles which obſtruct its courſe, and render it difficult and laborious. In this caſe, the ſymptoms attending obſtruction appear later than in the former. In theſe caſes, however, it is neceſſary that the practitioner ſhould accuſtom himſelf by practice to form a juſt eſtimate of the powers of nature, otherwiſe he may eaſily deceive himſelf ; in the former, ſuppoſing that a delivery is impoſſible ; and in the latter, that a delivery will be eaſy which cannot be effected without the aſſiſtance of art. An inſtance of this is given by our author, in a caſe to which (he ſays) more than forty perſons were witneſſes.

The operator pronounced that the woman would be ſpeedily delivered, on account of the facility with which the child's head had engaged with the firſt pains ; and attributing the obſtacles which ſoon after obſtructed its courſe to another cauſe, raſhly deſtroyed the child by uſing the crotchet, when its life might have been preſerved by other means, having waited two days in blind ſecurity, expecting a natural delivery. M. Baudelocque obtained poſſeſſion of the pelvis of this woman after ſhe died ; and tells us, that the circumference of the ſuperior ſtrait of the pelvis, when diveſted of all its coverings, meaſured 14 inches, but the inferior only *nine*. The diſtance from the point of the os ſacrum to the ſymphyſis of the pubes, as well as the interval between the iſchiatic tuberoſities, was but three inches. The cavity of this pelvis diminiſhed inſenſibly in breadth from one ſtrait to the other, and was as regular as poſſible in its contour.

The excavation, or middle part of the pelvis, is much more ſeldom defective in its form than the ſtraits ; and when this is the caſe, it muſt ariſe from ſome exoſtoſis, or from the ſacrum deſcribing a right line in its anterior part, inſtead of being curved as uſual. The ſtraight and flat form of the ſacrum generally produces fewer obſtacles to delivery than the too great curvature of

it. The former fault generally affects only the cavity of the pelvis, and cannot hinder the passage of the child, if the canal be otherwise well disposed: but the latter, or too great a curve of the sacrum, commonly proves injurious to both straits, contracting them from before backwards, and at the same time diminishing the depth of the pelvis at the back part, as well as the respective height of the arch of the pubes. In these cases the head, though it passes the first strait with difficulty, cannot pass the second; being stopped in its course by the inferior part of the sacrum before the occiput is long enough to engage under the arch.

Labours may also be rendered difficult by too great a length of the symphysis of the pubes; a want of elevation, or breadth of the arch of these bones; the length and wrong direction of the ischiatic spines, as well as a consolidation of the coccyx with the point of the sacrum. These faults, however, are very rare, if we except the consolidation of the coccyx: they are scarce ever met with alone, and are generally the consequences of a bad conformation of the rest of the pelvis. Even this consolidation, however, though more common than the other faults, yet cannot obstruct delivery so frequently as has been imagined; and when it does so, it is only in women who have a narrow pelvis. Our author denies the position laid done by some, that the head of the child, in all cases, pushes back the point of the coccyx half an inch, or even a whole inch. Those who assert this (he says) know not the relation betwixt the dimensions of the head and the inferior strait in most women. Whence he cannot recommend a precept founded upon this principle, by which it is directed to push back the coccyx, when the head, though low down, cannot disengage itself easily.

We must now consider a subject on which the writers upon midwifery have been greatly divided, viz. the separation of the bones of the pelvis in the time of labour. Some have imagined that this separation took place in all labours; others that it happened only in difficult cases; some, that it indicates a morbific state; and some that it was quite impossible.—M. Baudelocque allows the possibility of such a separation, but denies that it happens so frequently as is imagined. "Experience (says he) demonstrates, that this separation, far from being common, is very rarely met with, and is not more usual after a laborious than after an easy labour, nor in a distorted pelvis than in one well formed. I have sought for it twenty times in all these cases, by opening the bodies, and have scarcely met with one which could remove all doubt of its existence." In those cases where it takes place, he is of opinion, that the filtration of serum into the ligamentous tissue of the symphysis, must be regarded as the usual predisposing cause. The remote cause, of consequence, must be whatever produces this filtration. This, he thinks, cannot be done merely by the

preſſure of the gravid uterus on the trunks of the veſſels which are diſtributed to theſe ſymphyſes. An alteration in the fluids themſelves he ſuppoſes likewiſe to be neceſſary.

But though the prediſpoſing cauſe of this ſeparation muſt be the relaxation of the ſymphyſes by the infiltration of ſerum, we are not to look upon the ſwelling of the cartilages by means of this infiltration to be the immediate cauſe: for however the ligaments may be relaxed, the cartilages which incruſt the extremities of the oſſa pubis, as well as the articular facettes of the oſſa ilia and the ſacrum, are no thicker; ſo that they cannot, as ſome have ſuppoſed, act like wetted wedges by which large blocks of ſtone may be cleaved. "The wedge by which the bones of the pelvis are ſeparated (ſays our author), does not act between the extremities of theſe bones, but in the circle formed by their aſſemblage in the pelvis itſelf: it is the uterus charged with the produce of conception in the latter periods of pregnancy, and the child's head forced down by the action of the uterus, and of the abdominal muſcles in time of labour."

This ſeparation, however, is not always the effect of a relaxation and ſtretching of the ligamentous tiſſue of the ſymphyſis. In ſome caſes, where the obſtacles which obſtruct the paſſage of the child are very great, and the efforts for its expulſion very ſtrong and laſting, the ſymphyſes tear, and permit the bones to ſeparate much further than they could have done by a ſimple relaxation. "I muſt add (ſays our author), that it is not the ſymphyſis of the pubes, properly ſpeaking, which tears; for no effort can break the ligamentous ſubſtance which unites theſe bones to each other; the ſymphyſis detaches itſelf from one of them, and leaves the bone naked." The ſeparation in queſtion has likewiſe frequently taken place in inſtrumental deliveries, to which the natural efforts ſeemed to contribute nothing; and it has alſo been found in conſequence of a ſtroke or fall.

"Being deceived in the principle of this ſeparation (ſays M. Baudelocque), they neceſſarily erred in the conſequence deduced from it. It has been ſo firmly believed to take place in all labours, that it was thought to be abſolutely neceſſary; and that without it many women could not be delivered without extreme difficulty. Having thus miſtaken the neceſſity and pretended advantages of this ſeparation, the natural reſiſtance of the ſymphyſes, and above all the dryneſs and rigidity neceſſarily induced in them by age, were conſequently reckoned among the cauſes of difficult and laborious births. Obſtacles have been attributed to the ſtate of theſe ſymphyſes, which merely depended on the reſiſtance of the neck of the uterus, and of the external parts; and it has been recommended to moiſten and relax them by the uſe of baths, cataplaſms, liniments, fomentations, &c. But what can be expected from ſuch methods, when delivery is obſtructed by a narrow

pelvis? Will any one venture to aſſert, that he has once by ſuch means obtained the effect he expected, and that he has thus aſſiſted labours which could not otherwiſe have been terminated but by the Cæſarean operation, as has ſo often been publiſhed? I ſhould have diſpenſed with demonſtrating the fallacy which has prevailed on this point, if it had not led ſome practitioners into a very ſerious conſequence. In order to appreciate all theſe means, and fix the degree of confidence to be placed in them, ſuppoſing that they could operate to the relaxation of the ſymphyſis of the pelvis, it is neceſſary to determine what degree of amplitude can be given to that cavity by the ſeparation of the bones which conſtitute it. The oſſa pubis cannot ſeparate without augmenting the circumference of the pelvis; but how much will its diameter be increaſed? If the circumference were perfectly circular, every poſſible diameter would partake a third of that augmentation: but as the entrance of the pelvis is in general the more elliptic as it deviates more from its natural ſtate, it follows, that its different diameters cannot increaſe in the ſame proportion; and we may ſay that there is none but the tranſverſe one which can become larger. In a moderate ſeparation the *antero poſterior* diameter is ſcarce at all augmented; and it has been repeatedly demonſtrated, that the oſſa pubis muſt ſeparate at leaſt an inch to procure two lines in that direction; while the tranſverſe diameter ſhall be increaſed ſix lines, and often more.

"The pelvis being larger in moſt women than is neceſſary for their delivery, the ſeparation of the bones could be of no advantage to them, nor render their delivery more eaſy. Far from regarding it, with ſome ancient authors, as a benefaction of nature, we ought to conſider it as an additional ſource of inconveniences in thoſe women who are ſubject to it: for, on one ſide, we ſee that a pelvis too large expoſes the woman to a number of accidents; and on the other, that there are ſome which inevitably accompany the ſeparation, and the mobility of the bones which form that cavity. Far from favouring delivery in all theſe caſes, it could not but render it more tedious and painful to the woman, as experience has convinced me. If we ought to expect any real advantage from it, conſidering it only with reſpect to the paſſage of the child, it could only be in thoſe women who have the pelvis deformed, and where the defect which rendered delivery impoſſible did not exceed two lines at the moſt; ſince a ſeparation of an inch cannot procure an augmentation of more than two lines in the ſmall diameter of the ſuperior ſtrait, which is almoſt always that which occaſions the greateſt obſtacles to the exit of the child. If from a ſeparation of an inch, which has never taken place between the oſſa pubis without a rupture of their ſymphyſis, we are not to expect an augmentation of more than two lines in the direction of the little diameter of the ſuperior ſtrait, what can we obtain from a ſeparation

always much lefs, and fo little apparent in moft women that we may doubt its exiftence? The examination of a great number of women who have died in child-bed, has proved to me that it is exceffively rare for the feparation in queftion to amount to two lines; and I never found it exceed that but once. But fuppofing (what is impoffible) that art could procure a feparation of an inch between the offa pubis without dividing their fymphyfis, what practitioner would dare to affirm, without fear of being deceived, that the volume of the child's head did not exceed the little diameter of the fuperior ftrait by more than two lines? If it is difficult to eftimate juftly the degree of opening in the pelvis, it is much more difficult ftill to judge of the child's head; and it is only by taking the mean between the largeft and the fmalleft that we ufually eftablifh the relation of its dimenfions to thofe of the pelvis; but a *thereabouts*, in the cafe fuppofed, cannot fupply the place of that precifion which would be neceffary."

From his reafoning upon this fubject, M. Baudelocque concludes directly againft the operation of cutting the fymphyfis of the pubes, as being not only ufelefs, but attended with very dangerous confequences. "When this feparation (fays he) has been fuddenly made, fevere pains in the parts divided, an impoffibility of walking, and fometimes even of moving the inferior extremities, inflammation, fever, abfceffes, caries, and laftly death itfelf, have generally been the effects of it; but when a relaxation only takes place, the confequences are lefs fevere; a painful and tottering walk being the only fymptom attending it. If the relaxed fymphyfis at laft grow firm again, if the bones of the pelvis recover their former ftability, if the lamenefs goes off entirely in fome women, how often, on the contrary, have we not obferved an inability to walk, or even to move the legs, without violent pain, continue for years afterwards?"

These violent fymptoms frequently attend even flight feparations of the bones in queftion. M. Baudelocque gives an inftance of a woman who had kept her bed ten months, being all that time afflicted with the moft excruciating pains in the junction of the offa pubis, and of one of the ilia, with the facrum, whenever fhe attempted to move the inferior extremities, though no feparation of the fymphyfis could be difcovered, nor any thing befides a flight mobility in that of the pubes. The accident had been perceived during the time of labour, and the midwife had been accufed of luxating the bones.

Dr. Denman has alfo treated this fubject at confiderable length. He informs us, that for many centuries it was believed that thefe bones were always feparated during the time of labour; or that there was a difpofition to feparate, and an actual feparation, if the neceffity of any particular cafe required that enlargement of the cavity of the pelvis which was confequent to it. The degree of

ſeparation was alſo ſuppoſed to be proportioned to ſuch neceſſity; and when this did not happen naturally, inſtruments were made uſe of for diſtending the parts: and, on the ſame principle, the ſection of the ſymphyſis of the pubes has been recommended. "This opinion (ſays he) ought probably to be aſſigned as one reaſon for the ſuperficial notice taken by the early writers on midwifery of thoſe difficulties which are ſometimes found to occur in parturition from the narrowneſs or deformity of the pelvis. To this may alſo be referred much of the popular treatment of women in child-bed, and many popular expreſſions in uſe at preſent. But this opinion has been controverted by many writers, who aſſert, that there was neither a ſeparation nor a diſpoſition to ſeparate; but that, when either of them did happen, they were not to be eſteemed as common effects attendant on the parturient ſtate, but as diſeaſes of the connecting parts. The diſputants on each ſide have appealed to preſumptive arguments, and to facts proved by the examination of the bodies of thoſe who have died in child-bed, in juſtification of their ſeveral opinions. But, notwithſtanding all that has been ſaid, I know not that we are authorized by the experience of the preſent time to ſay, that a ſeparation, or a diſpoſition to ſeparate, prevails univerſally at the latter part of pregnancy, or at the time of labour: yet, that theſe effects are often, if not generally produced, may be gathered from the pain and weakneſs at the parts where the bones of the pelvis are joined to each other before and after delivery. In ſome caſes alſo pregnant women are ſenſible of a motion at the junction of the bones, eſpecially at the ſymphyſis of the oſſa pubis; and the noiſe which accompanies it may ſometimes be heard by the byſtanders.

"A ſtrong preſumptive argument in favour of the ſeparation of the bones has been drawn from quadrupeds. In theſe the ligaments which paſs from the obtuſe proceſſes of the iſchia to the ſacrum, on which the firmneſs of the junction of the bones very much depends, and which at all other times reſiſt any impreſſion attempted to be made upon them, are for ſeveral days previous to parturition gradually deprived of their ſtrength, and the animal walks in ſuch a manner as would incline us to believe could only be produced by a ſeparation of the bones of the pelvis. Now it is not reaſonable to conclude, that a circumſtance which generally takes place in one claſs of viviparous animals ſhould never occur in another, eſpecially in a matter in which there is not eſſential difference."

Notwithſtanding theſe arguments, however, Dr. Denman does not look upon the matter to be yet abſolutely decided. "No perſon," he ſays, "who has been converſant in the diſſection of women who have died in child-bed, can have wanted opportunities of ſeeing every intermediate ſtate of theſe parts, from a ſeparation

in which the furfaces of the bones were loofened, and at a confiderable diftance from each other, to that in which there was not the leaft difpofition to difunite."

When this feparation takes place beyond a certain degree, it is to be looked upon as morbid: and, he fays, that it may be produced by the two following caufes: "1ft. A fpontaneous difpofition of the connecting parts. 2dly. The violence with which the head of the child is protruded through the pelvis." Of each of thefe cafes he gives an example. The firft was of a young lady of a healthy conftitution, who had been married in the 21ft year of her age, and in 1774 was delivered of her third child, which was unufually large, and the labour was fevere and tedious. For feveral days before delivery fhe had been fo much afflicted with pain and weaknefs in her loins, that fhe could not walk without affiftance. She recovered without any unfavourable circumftance, excepting that for feveral weeks fhe was incapable of ftanding upright, or putting one foot before the other; the attempt to do either being attended with pain and a fenfation of loofenefs and jarring, both at the parts where the offa innominata are joined to the facrum, and at the fymphyfis of the offa pubis. By the ufe of ftrengthening medicines fhe recovered, and in a few months was perfectly well.

It being fufpected that the complaints above mentioned had preceeded from too frequent parturition, fhe was advifed to fuckle her child for a longer time than ufual; and accordingly continued a nurfe for 15 months. Soon after this fhe became with child a fourth time. The complaints which had accompanied her former pregnancy now came on fooner, and with greater violence than before, infomuch that for three weeks before delivery fhe could neither walk nor ftand, and there was reafon to fuppofe that the bones of the pelvis were feparating. She was delivered on the 7th of July, 1777, the labour being accompanied with faintings, great irritability, and a total inability to move her inferior extremities. A few days after her delivery fhe had a fever, which terminated in an abfcefs in one of her breafts, by which fhe was confined to her bed for near feven weeks. In nine weeks fhe could walk with crutches, and received confiderable benefit by being fent into the country; and likewife, as fhe imagined, by drinking half a pint of infufion of malt twice a-day. In about five months fhe was able to walk without affiftance; though fometimes fenfible of the motion of the bones, which feem never to have been perfectly united.

About Chriftmas the fame year, this lady became again pregnant; and in the month of July, 1778, fhe began to feel an inability to move; which, however, was attributed to the heat of the weather: but on a fudden the pain and weaknefs of her back returned to fuch a degree, that fhe could walk no more till the 11th

of October, when ſhe was delivered of a fine child, but after a moſt ſevere and tedious labour, occaſioned in a great meaſure by her being totally unable to move. The ſymptoms after her delivery became very extraordinary and alarming. On the fourth day a fever came on ; and though this was ſoon removed, the pain at the junction of the bone ſtill continued. She had no command of her inferior extremities ; and the pain, when ſhe was moved, became ſo excruciating, that ſhe felt as if tearing aſunder. Her ſtomach was at all times much diſturbed ; but when the pain became violent, a nauſea, vomiting, or hiccough, came on. Strange ſympathies were produced in various parts ; as a teaſing cough, ſneezing, ſenſe of weight in her eye-lids, which could not be kept open though there was no inclination to ſleep. There was a noiſe in the bowels, and other nervous affections, all of which ceaſed when the pain was allayed by opiates.

Having remained for ſeveral months in this deplorable ſituation, it was at laſt thought proper to raiſe her from her bed, and cauſe her to make an effort to ſtand or walk, leſt her complaints ſhould be made worſe by ſuch a long courſe of inactivity. She had now, however, totally loſt the power of ſupporting herſelf ; the motion of the bones was plainly perceived ; and the conſequences of every trial were ſo painful, that there was a neceſſity for deſiſting. In 1779 ſhe was removed, upon a couch, in a boat to Margate, for the benefit of the air and ſea-bathing, from which ſhe was always ſenſible of receiving advantage. In this place ſhe continued to reſide ; and in *eight years* after her delivery became able to walk without crutches.

The ſecond caſe was of a young woman of a healthy but delicate conſtitution, who was in labour of her firſt child. The pains were ſo ſtrong, that the head of the child was forced through the external parts, and the perinæum ſuppoſed to be lacerated, in ſpite of all the oppoſition which could be made. At the inſtant when the head of the child was expelled, the operator perceived ſomething to jar under his hand, and was even ſenſible of a noiſe, which he attributed to the laceration of the perinæum. In a little time the placenta was extracted without hurry or violence ; and a few drops of *tinctura opii* were given to allay the uneaſineſs which took place, and was ſuppoſed to be occaſioned by *after pains*. On the following days, however, ſhe complained of an uneaſineſs in the region of the abdomen ; but no particular notice was taken of it, as the milk was regularly ſecreted, and there was no ſymptom of fever ; but on the fourth day, when taken out of bed, ſhe was found to be unable either to ſtand or ſit on her chair by reaſon of the pain and weakneſs in the part of which ſhe originally complained. This was afterwards conjectured to ariſe from a ſeparation of the bones of the pubes ; to which conjecture the long continuance of the complaint ſeemed to give coun-

tenance. The conjecture was founded on the positions and attitudes in which the patient sought to find relief. The symptoms were as follow:—When she endeavoured to stand upright, which she could do better upon one foot than both, and with her feet close than at a distance, together with the pain at the symphysis, she had a sense of extreme weakness, accompanied with a faintness. When she first sat down on her chair, resting her elbows upon the arms, the complaints became tolerable. When she had remained a little time in this position, they again became importunate, and she supported herself with her hands upon her knees, and presently bent forwards, so as to lean her elbows upon her knees: this position became irksome, she was obliged to return to her bed, where she became immediately easy. When she first attempted to walk, she was compelled to bend forwards in such a manner as to rest her hands upon her knees, making a straight line from her shoulders to her feet. At the end of fourteen weeks, whilst she was in a coach, into which she had often been lifted for the benefit of air and exercise, she had a discharge which she supposed to be menstruous; but which, though it ceased before her return, gave immediate relief. From this time she became better every day, and in six weeks was able to walk. She had afterwards three children, with which her labours were easy, and she never had any return of the above-mentioned complaints.

From all this it is evident, that Dr. Denman differs considerably in his opinion from M. Baudelocque concerning the separation of these bones. According to him, it appears that this separation, though extremely painful, does not seem to be attended with *fatal* consequences; and with regard to the *quantity* of the separation, it must undoubtedly be sometimes much greater than what M. Baudelocque supposes; for Dr. Denman brings an instance from the 484th number of the Philosophical Transactions, in which the bones were separated to the distance of *four inches*. This happened in consequence of the starting of a horse when a gentleman was riding. He observes, however, that in women, the violence which the connecting parts of the bones undergo when the head of the child is protruded through the pelvis with extreme difficulty, sometimes occasions an affection of more consequence than even the separation of the bones themselves. This is the formation of matter upon the loosened surfaces of the bones, preceded by great pain, and other symptoms of inflammation.

In the beginning of this complaint, it is difficult to ascertain whether the connecting parts of the bones, or some of those contiguous, be the seat of the disease; but when suppuration has taken place in consequence of the injury sustained at the junction of the ossa innominata with the sacrum, the abscess has sometimes been cured by the common treatment, having formed in the neighbourhood of the injured part. At other times, when matter has been

formed about the symphysis of the os pubis, hectic symptoms have ensued, and the cause of them only discovered after the patient died. In some cases the matter has burst through the capsular ligament of the symphysis at the inferior edge, or perhaps made its way into the bladder; and in others it has insinuated itself under the *periosteum*, continuing its course along the pubes, until it arrives at the acetabulum. Thus all the symptoms were aggravated; and the matter making its way towards the surface, a large abscess has been formed on the inner or fore part of the thigh, or near the hip; so that the patients have at last sunk under the fever, and profuse discharge from the ulcer. On dissecting those who have died in this manner, the track of the matter has been followed from the aperture of the abscess to the symphysis, the cartilages of which were found to be eroded, the bones carious, and the adjacent parts very much injured or destroyed. Our author imagines it possible, by means of some particular symptom, to discover whether or not there be any disposition in the parts above mentioned to suppurate, or to know when suppuration has taken place. In all cases of unusual pain, attended with equivocal symptoms, the parts ought to be examined with great care and attention: for where there is any disposition to suppurate, it might perhaps be removed by proper means; and when the matter is formed, if there be a swelling in the symphysis, and, more especially, if a fluctuation could be perceived, the propriety of making an incision to evacuate the matter, and prevent further bad consequences, might be determined.

With regard to the possibility of re-uniting the bones of the pelvis after they have once been separated, our author has the following observations:

"When the connection of the bones of the pelvis has either been impaired or destroyed, it is probable that a confirmation or re-union may take place by a restoration of the original mode, by a callus, or by anchylosis. But it is likewise possible that the bones may remain in a state of separation, and an articulation be formed by the ends of each bone, at the symphysis of the ossa pubis, and at the junction of the ossa innominata with the os sacrum." Of this last the doctor has seen one instance in a dead body, and has had reason to suspect the existence of it in some living persons. In the lower degrees of imperfection, the former method of union probably takes place; as the complaints made by women of pain and weakness, after delivery, generally go off before their month of confinement is elapsed; but when they continue for a longer time, the best method is to enjoin the patient rest, and an horizontal posture. In an increased degree of the complaint, where the health of the patient is affected, a longer time will be required for the recovery; but should the injury be too great to admit of the restoration of the original

mode of union, a much longer time will be requisite for the formation of a callus, if this ever takes place except as a previous step to an anchylosis. This last has been observed frequently to take place at the junction of the ossa innominata with the sacrum, but never at the symphysis of the pubes. In this case little can be expected, excepting from such remedies as tend to restore the constitution to its pristine vigour; and in the first case above related, the only thing from which the patient seemed to obtain relief was the cold-bath. She was likewise much assisted by the use of a swath, or broad belt, made of soft leather, quilted, and buckled with such firmness over the lower part of the body, as to lessen, if not prevent, the motion of the bones; and this was kept in its situation by a bandage passed between the legs, from the hind to the fore part of the belt. But when a joint is formed between the separated surfaces of the bones, all hope of recovering the patient to her former health may be given up. The only thing which can then be done for her relief must be by the use of a belt, or some similar contrivance, to substitute, as much as possible, artificial firmness, instead of natural. Dr. Denman saw one case in which he suspected this to have happened, and in which the life of the patient was truly miserable. He is of opinion, however, that it very rarely occurs; having been informed of another person, who, after eight years' confinement to her bed, in consequence of the separation of the bones in the time of labour, was at last restored to the perfect use of her inferior extremities. Instances also, though rare, have occurred, in which women, after labours, have suffered much pain in the region of the sacrum, and totally lost the power of moving their inferior extremities. This has been supposed a paralytic affection, and they are said to be bed-ridden; but as these patients have generally been restored, though after a very long confinement, our author thinks it reasonable to suppose that their infirmity had been occasioned by a separation of the bones, which at different periods after the accident, according to the degree of their separation, had recovered their former connection and strength.

SECT. II. *Of the* FEMALE ORGANS *of* GENERATION.

Anatomical writers usually divide the female organs of generation into *external* and *internal*. In the first division they include the *mons veneris*, *labia pudendi*, *perinæum*, *clitoris*, *nymphæ*, and *carunculæ myrtiformes*; and in the latter, the *vagina*, with the *uterus* and its appendages.

The *mons veneris*, which is placed on the upper part of the symphysis pubis, is internally composed of adipose membrane, which makes it soft and prominent: it divides into two parts called

labia pudendi, which defcending towards the rectum, from which they are divided by the perinæum, form what is called the *fourchette*. The perinæum is that flefhy fpace which extends about an inch and a half from the *fourchette* to the anus, and from thence about two inches to the coccyx.

The labia pudendi being feparated, we obferve a fulcus called *foffa magna*; in the upper part of which is placed the clitoris, a fmall round fpongy body, in fome meafure refembling the male penis, but impervious, compofed of two *corpora cavernofa* arifing from the tuberofities of the offa ifchii; furnifhed with two pair of mufcles, the *erectores clitoridis*, and the *fphincter vaginæ* *, and terminating in a *glans* which is covered with its prepuce. From the lower part, on each fide of the foffa, pafs the *nymphæ*, two membranous and fpongy folds which feem deftined for ufeful purpofes in parturition, by tending to enlarge the volume of the vagina as the child's head paffes through it. Between thefe, about the middle of the foffa magna, we perceive the orifice of the *vagina* or *os externum*, clofed by folds and wrinkles; and about half an inch above this, and about an inch below the clitoris, appears the *meatus urinarius* or orifice of the *urethra*, much fhorter, though fomewhat larger, than in men, with a little prominence at its lower edge, which facilitates the introduction of the catheter.

In children the orifice of the vagina is found partly clofed up by a thin membrane called *hymen*; the form of which is different in different fubjects, being in fome fhaped like a crefcent, and in others of a circular form. In general, it is fufficiently open to admit the paffage of the menfes if it exifts at the time of their appearance; but inftances are related of its having been found perfectly clofed, in which cafe it is to be divided longitudinally. When this membrane is ruptured by the venereal congrefs, or any other caufes, it recedes and forms (it is thought) the *carunculæ myrtiformes*, which are fometimes totally effaced in women who have had many children.

The *vagina*, fituated between the urethra and the rectum, is compofed of two membranes, one of which is mufcular, and the other a continuation of that which covers the foffa magna, furrounded with a fpongy cellular fubftance. It terminates in the uterus about half an inch above the os tincæ, and is wider and fhorter in women who have had children than in virgins.

All thefe parts are plentifully fupplied with blood-veffels and nerves. Around the nymphæ, there are febaceous follicles which pour out a fluid to lubricate the inner furface of the vagina; and the meatus urinarius, like the urethra in the male fubject, is con-

* Although, in conformity to the generality of writers, the clitoris is here defcribed as having two pair of mufcles, the *erectores* alone feem ftrictly to belong to it; the fphincter vaginæ having no connection with the clitoris.

ſtantly moiſtened by a ſecreted mucus, which defends it againſt the acrimony of the urine.

The *uterus* is a hollow viſcus, ſituated in the hypogaſtric region between the rectum and the bladder. It is deſtined to receive the firſt rudiments of the fœtus, and to aſſiſt in the developement of all its parts till it arrives at a ſtate of perfection and is fitted to enter into the world, at the time appointed by the wiſe Author of nature. The uterus in its unimpregnated ſtate, reſembles in ſhape a pear, ſomewhat flattened; with its *fundus* or bottom-part turned towards the abdomen, and its *cervix* or *neck* ſurrounded by the vagina. The entrance into its cavity forms a little protuberance, which has been compared to the mouth of a tench, and is called *os tincæ*. The ſubſtance of the uterus, which is of a conſiderable thickneſs, appears to be compoſed of many glands interwoven with ſmall ligamentous fibres, ſmall branches of nerves, ſome lymphatics, and with arteries and veins innumerable. Its nerves are chiefly derived from the intercoſtal, and its arteries and veins from the hypogaſtric and hæmorrhoidal. The membrane which lines its cervix, is a continuation of the inner membrane of the vagina; but the outer ſurface of the body of the uterus is covered with the peritonæum, which is reflected over it, and deſcends from thence to the inteſtinum rectum. This duplicature of the peritonæum, by paſſing off from the ſides of the uterus to the ſides of the pelvis, is there firmly connected, and forms what are called *ligamenta uteri lata*; which ſerve not only to ſupport the uterus, but to convey nerves and blood-veſſels to it.

The *ligamenta uteri rotunda* ariſe from the ſides of tho fundus uteri, and paſſing along within the fore part of the ligamenta lata, deſcend through the abdominal rings, and terminate in the ſubſtance of the mons veneris. The ſubſtance of theſe ligaments is vaſcular: and although both they and the ligamenta lata admit the uterus, in the virgin ſtate, to move only about an inch up and down; yet in the courſe of pregnancy, they admit of conſiderable diſtenſion, and after parturition return nearly to their original ſtate with ſurpriſing quickneſs.

On each ſide of the inner ſurface of the uterus, in the angle near the fundus, a ſmall orifice is to be diſcovered, which is the beginning of one of the *tubæ fallopianæ*. Each of theſe tubes, which are two in number, paſſing through the ſubſtance of the uterus, is extended along the broad ligaments, till it reaches the edge of the pelvis, from whence it reflects back; and turning over behind the ligaments, about an inch of its extremity is ſeen hanging looſe in the pelvis, near the ovarium. Theſe extremities, having a jagged appearance, are called *fimbriæ* or *morſus diaboli*. Each tuba fallopiana is uſually about three inches long.

Their cavities are at firſt very ſmall, but become gradually larger, like a trumpet, as they approach the fimbriæ.

Near the fimbriæ of each tuba fallopiana, about an inch from the uterus, is ſituated an oval body called *ovarium*, of about half the ſize of the male teſticle. Each of theſe *ovaria* is covered by a production of the peritonæum, and hangs looſe in the pelvis. They are of a flat and angular form; and appear to be compoſed of a white and cellular ſubſtance, in which we are able to diſcover ſeveral minute veſicles filled with a coagulated lymph, of an uncertain number, but not often exceeding twelve in each ovary. In the female of riper years, theſe veſicles become exceedingly turgid; and a kind of yellow coagulum is gradually formed within one of them, which increaſes till its coat diſappears; and it then changes into an hemiſpherical body, called *corpus luteum*, which reſembles a bunch of currants, and is deſcribed as being hollow, and containing within its cavity the very minute membranes or eggs, each of which may become the ſeat of a fœtus. In conception, one of theſe mature ova is ſuppoſed to be impregnated with the male ſemen, and to be ſqueezed out of its nidus into the fallopian tube; and Baron Haller obſerves, that the number of ſcars or fiſſures in the ovarium conſtantly correſponds with the number of fœtuſes excluded by the mother.

CHAP. II. Of IMPREGNATION.

AS it is in human ſubjects that the gradual proceſs of generation has been principally enquired into, and the ſtructure and office of the organs ſubſervient thereto chiefly examined; what the lateſt naturaliſts and anatomiſts have ſettled with regard to it is reſerved for this chapter.

The proceſs of generation, ſo far as the male contributes to it, is as follows:—The penis being erected by an affuſion of blood; the glands, at the ſame time, tumefied; and the nervous papillæ in the glands much rubbed and highly excited, in coitu; an ejaculatory contraction follows, by which the ſeed is preſſed out of the ſeminal veſicles, and expelled with ſome conſiderable force.

The proceſs of generation on the part of the female is thus: The clitoris being erected after the like manner as the penis in man, and the neighbouring parts all diſtended with blood, they more adequately embrace the penis in coitu, and, by the intumeſcence, preſs out a liquor from the glands about the neck of the womb, to facilitate the paſſage of the penis. At the ſame time, the fibres of the womb, contracting, open its mouth (which at other times is extremely cloſe) for the reception of the finer part of the ſemen; and this being conveyed thither with ſome impetus, is retained in the uterus by the convulſive reſtriction of the

inner membrane thereof, and thus prepared to impregnate the ovum.

During the act of coition, the fallopian tubes growing stiff, embrace the ovaries with their strong muscular edges like fingers, and compress them, till their mouths being dilated and expanded by this membrane, force the egg, now ripened, into their cavities, and gradually drive it forwards by their vermicular motion, till at last they protrude it into the cavity of the womb to meet the semen of the man.

Others rather suppose the seed conveyed from the uterus, through the fallopian tubes, to the ova; and thus take the impregnation to be first performed in the ovaries, or even in the tubæ themselves, the ova and the seed meeting by the way.

Others again, considering the closeness of the mouth of the womb, and the thickness of the membranes of the ovaries, judge it impossible for the seed to pass that way; and therefore suppose it is taken up by the veins which open into the cavity of the vagina, or even the womb, where circulating, it ferments with the mass of blood; and hence all the symptoms which appear in conception. At length it enters and impregnates the egg by the small twigs of arteries which are upon its membranes. This fermentation swelling the membranes of the tubæ, they open their cavity, and make room for the ova to pass into the womb.

The egg impregnated, and close shut up in the womb, swims in the humours thereof; which, growing more and more subtil, enter the parent pores found on one side the ovum, and soon distend, fill, and augment it; and there, being still further attenuated, nourish the embryo, thicken and expand the membranes of the ovum, especially in that part by which it grew to the ovary; and thus form the rudiments of a placenta.

The same causes still continuing, and the pores both of the placenta and the membranes being enlarged, the egg begins to fill the cavity of the womb, and at length its stem or calix grows to the concave surface thereof; and thus is the navel-string formed.

This system is founded on the supposition of animalcula in the male seed. They who set them aside as unconcerned in generation, account for it thus: The seed containing volatile, oily, and saline parts, as appears from the fetid smell, oleaginous substance, &c. being lodged in the womb, and there further digested and exalted, grows yet more volatile, fetid, pungent, and stimulating; and thus, adding to the heat occasioned by coition, vellicates the nervous fibres of that part, and occasions a fermentation and gentle inflammation, and by that means an extraordinary flux of humours to that and the adjacent parts.

By this means the tubæ become rigid, and fit to grasp the ovaries, which are also heated by the effluvia of the semen and the

warmth of the parts ſurrounding. Upon this there is a greater flux into the ovaries; till at length the ova, ſome of them at leaſt, by ſuch greater ſupply of nouriſhment, increaſe in bulk; and as thoſe graſped by the edges of the tubæ will be kept warmeſt, and the greateſt flux be made thereto, they will ſooneſt be ripened, fall off, and be received by the tubæ, and conveyed to the womb; where growing after the manner of the ſeeds of plants, the placenta at length takes hold of, and adheres to the uterus; from which time the embryo begins to be nouriſhed after a different manner.

Thus we ſee, in tracing the proceſs of generation, theoriſts have ranged themſelves on three diſtinct grounds, each of which has had its ardent advocates, and as ſtrenuous opponents. One gives to woman alone the humble office of affording a proper nidus for the due evolution of the fœtus, which, according to this theory, already exiſts in the male ſemen, and requires only a fruitful habitation. Another directly reverſes this poſition; he puts the female in poſſeſſion of every requiſite for the formation of a new animal, and conſiders the male a mere ſtimulating engine to call the latent powers of the female into life. The third gives not pre-eminence to either ſex, but with the mutual embrace produces a mutual effect; he regards both the male and female as moſt eſſentially concurring in the work of re-production, each affording a ſomething, which, uniting under proper circumſtances, becomes the proximate cauſe of impregnation.

Although every exiſting theory on the re-production of animals is reducible in its principle to one of the above grounds, the warm and fertile imagination of ſpeculative minds has led to almoſt innumerable modifications, each theoriſt aſſuming his fundamental poſition, and forming his deductions in manner and reſpect to the direction of his fancy.

Mr. Pulley, in an eſſay on the proximate cauſe of animal impregnation, after combating the opinion that *corpora lutea* are deciſive proofs of impregnation, ſays, "What a train of evidence, embracing facts moſt poſitive and indiſputable, does that author call up againſt him, who maintains that the male ſemen alone poſſeſſes the power of ſtimulating the os uteri and adjoining parts, and that by ſympathy generation is effected! When a negro man embraces a white woman, why is it that the offspring is a mulatto? When a male aſs copulates with a mare, why does the mule partake of the nature of both? And when dogs and bitches of different ſpecies have intercourſe, why in appearance do the mongrel whelps claim affinity to both parents? Again, it is a ſelf-evident truth, that a child may inherit the diſpoſition to the conſtitutional diſeaſes of either parent; and ſhall it be ſaid, that it is in the power of *ſympathy* to hand down to poſterity the contaminated habit of the father? Beſides, if the ſemen

be allotted merely to ftimulate the uterine fyftem, it would feem a totally unneceffary fecretion; for we find that the fexual act is not wanting, even to effect thofe changes, which the femen, by this theory, is only permitted to perform."

A new idea of generation is thrown out by Dr. Couper, which, however, he does not appear to have by any means eftablifhed. He alleges, that the femen is abforbed by the vagina, which is peculiarly conftructed for this very purpofe; that it is thus thrown into the general circulation, impregnating the whole mafs; the refult of which, like other functions for other ends, is determined to the ovaria. This he confiders probable, from the powerful effects of the femen reforbed by the male; from its effects on the female when impregnation does not take place, as well as when it has taken place; and from a multitude of appearances and circumftances.

In the Medical Journal, Mr. Saumarez controverts the doctrines of Animal Impregnation, "evidently written for the purpofe of confirming two opinions, which have lately been entertained on the fubject. The one is, that the palpable application of femen to the ovarium does not take place;—and fecondly, that the exiftence of corpora lutea conftitutes the true teft of animal impregnation.

"In order to prove the error of the firft opinion," continues he, "I fhall trace the various modes by which we know fœcundation is accomplifhed in fome orders of the more fimple fyftems, as it will enable us to underftand the manner in which it is effected in thofe of a more complicated ftructure. Such is the regularity which vegetables, and the lower orders of animals, difplay in the actions they perform, that we are neceffarily led to conclude, that thofe actions are governed by fixed and general principles, which they cannot either fupprefs or prevent; there is an appointed period of growth for the different organs in general of each, and an appointed feafon for the evolutions of particular organs, and when the difpofition for their refpective actions begins and ends. The alteration which vegetables periodically undergo, from a torpid to an active ftate, until fructification is accomplifhed, is obvious to every obferver. In many vegetables the propagation of the fpecies is not confined to one, but extends to feveral different modes, viz. by branches and buds, by fuckers, by leaves, and by feed; when the propagation of the fpecies is the confequence of feed, the organ by which it is produced is found to be refident, for the moft part, either in the fame branch, or enclofed within the fame calyx. There arifes either directly from the fummit, or from the fides of the germen or feed-bud, an erect column called piftillum, the bafe of which has received the appellation of ftyle, and which is terminated by the ftigma, or crown of the piftil, and is generally found with a downy covering of a moift quality:

it is this organ which Linnæus ſuppoſed conſtitutes the female part of generation. External to the piſtil we find the ſtamina to be ſituated; the baſe immediately ariſes from the plant, and proceeding in a thread-like form is called *filamentum*, which is terminated by the *anthera;* the anthera generally conſiſts of two cavities, which contain a fine farinaceous powder, analogous to the *ſemen maſculinum*, called pollen; theſe cavities ultimately burſt, ſo that the pollen which is ſhed from the anthera, or ſummit of the ſtamen, is received by the ſtigma, or ſummit of the piſtillum, ſo that an union of both takes place. Theſe are the means which vegetables employ to celebrate their connubium, or marriage, and the mode by which it is conſummated. It appears to me impoſſible to do away the crowd of facts which prove the power which the pollen contains, and the faculty it has of imparting the character of the ſyſtem from whence it is produced, to the female ſyſtem by which it is received; the various hybrid productions that are the conſequent reſult eſtabliſh the fact beyond controverſy.

" If we proceed from vegetables to the lower order of animals, we find that although the mode of propagation may be limited with reſpect to them, that it is far ſuperior to what the higher claſſes poſſeſs. The ſexes are alſo not only particularly diſtinguiſhed, but there is evidently ſexual intercourſe between them: in them the mode of propagation is limited to one, requiring the union of two ſubjects before it can be accompliſhed. The firſt order of theſe animals is called hermaphrodite, when both ſexes, male and female, are found exiſting in the ſame ſyſtem—the ſnail, the ſlug, the leech, &c. belong to this claſs. Although hermaphrodite animals poſſeſs both ſexes, it does not appear that the different ſexes of the ſame ſyſtem ever copulate together; the union of two ſeparate ſyſtems is neceſſary to call forth the combined actions of the four ſexual organs at one and the ſame time.

" When we go to examine the generating organs of different animals, we ſhall find that the evolution they undergo at particular ſeaſons is great and ſtriking. The evolution of thoſe organs is leſs evident in the higher than it is found in the lower claſſes; leſs evident in the human ſpecies than in quadrupeds; in quadrupeds than it is in birds, in the amphibia, in fiſh, or in vegetables. The direct evidence we poſſeſs that the ſemen of the male is applied in a palpable form to the ova of the female in the latter ſyſtem, leads us to make an analogical concluſion, that it takes place alſo in the former, although the manner is different, ariſing from the difference in the nature of their organiſation; I ſhall therefore proceed to examine the mode by which fœcundation in them is accompliſhed.

" The organs of generation in fiſh conſiſt of two teſtes, and

two ovaria: the ſyſtem that poſſeſſes the one is called the male fiſh; the other is diſtinguiſhed by the appellation of female. If either are examined in the winter ſeaſon, during their torpid ſtate, both theſe organs are found flaccid and empty; on the contrary, when viewed in the ſpring and ſummer, when the evolution in the ſyſtem in general has taken place, theſe parts in particular appear diſtended and full. The teſtes, which are diſtinguiſhed by the whiteneſs of their colour, and ſoftneſs of their texture, have received the appellation of roe, and are then full of a white fluid called ſemen. The female organs are called ovaria, known by the name of hard roe, and are completely full of ova.

"When theſe parts have attained the full perfection of their evolution, they are expelled from each ſyſtem; the ſemen of the male unites with the ova of the female, and fœcundation enſues, without ſexual intercourſe between both. It is with a view of accompliſhing this end that fiſh in general go in ſhoals; that particular claſſes of fiſh have particulur latitudes for their habitations, and particular ſituations to which they reſort at particular ſeaſons, in order that the ſpawn which they ſhed may immediately combine together, an union takes place between the ſemen and the ova, without any intercourſe between the parents, and fœcundation enſues to an extent far ſurpaſſing any example we witneſs in the moſt complicated frame.

"In the amphibia, and birds, the ſame enlargement in the fœcundating organs is equally apparent. The animals that belong to the former claſs conſiſt eſpecially of the frog, the toad, the turtle, the lizard, and all of the ſnake kind. I ſhall take the frog as an example, becauſe the changes the male and female undergo are more ſtriking than in any other. We have conſtant opportunities of beholding the palpable application of the male ſemen to the female ova.

"The male frog has a teſtis ſituated in the loins, having an excretory duct called *vas deferens*, communicating with a *veſicula ſeminalis*, which finally terminates at the *anus*. The female frog has a number of ſmall ova, attached to a membrane, which is connected to the loins ſomewhat ſimilar to the male teſtis. There is an oviduct terminating in an uterus, to which it is attached. The ovarium and the teſtes are remarkably ſmall during the autumnal and winter months; but as the winter cold departs, and the vernal warmth ſucceeds, the teſtes and the ova become gradually developed, and ultimately aſſume a conſiderable ſize; ſo that when theſe animals are examined in the ſpring, the appearance they diſplay is totally different from what they manifeſted in the winter. Inſtead of being thin and flat, languid and torpid, they are found, lively, and active. The male is plump and fat, the female diſtended, and ſwelled to a conſiderable ſize: and finally, inſtead of ſubſiſting in a ſtate of ſeparation and divorce,

they are found embracing each other, and consummating their union. Animals that are in this state are said to have the *œstrum* upon them. The male climbs upon the back of the female, passes his arms over her shoulders, and adheres to the surface of her body in such a manner that the vas deferens, which terminates at the anus, is placed exactly above the vagina; this is the condition in which they are found, and which they preserve for a fortnight, until the final cause of their union is accomplished: the final cause of their union in the female consists in the expulsion of the ova which the ovarium contains; in the male it consists in the discharge of the semen from the testis, through the medium of the vas deferens, upon the ova, so that they become sprinkled by it in proportion as they are repelled, constituting the mode by which fœcundation is accomplished.

" The mode of propagation in this prolific system, although very simple, is even more complicated than it is in fish. In fish there exists a separation between the male and female, but an union only between the semen and ova from without; in frogs there is an union between the male and female in general, before fœcundation can be accomplished.

" The higher species of the amphibious class are all of the snake kind: in them we find a considerable degree of difference which subsists; instead of fœcundation taking place without the use of sexual organs, fœcundation can be accomplished by means of sexual organs alone. The male has two *testes*, with two *vasa deferentia*, which terminate not at the anus, as in the frog, but with two distinct penes, or male sexual organs, the surfaces of which are covered over with numerous papillæ. The female has two sets of ovaria, which extend from the middle of the animal's body to its posterior extremity, containing an abundant quantity of ova; there are two Fallopian tubes, or oviducts, which receive the ova from the ovaria, and convey them to the uterus, from whence they are expelled. Although the mode of fœcundation is different in these higher systems, the end is evidently the same as in the inferior; the semen, instead of uniting with the ova out of the body, is conveyed within by the agency of the sexual organs of the male, through the medium of the Fallopian tubes, to the ovaria of the female, in order that it may unite with the ova which are sufficiently evolved, that fœcundation may be accomplished. That the Fallopian tubes possess the power of conveying the semen to the ovaria, is evidently proved from the strong and active peristaltic motion they display, and which appears evidently designed in the first instance to convey the semen to the fimbriæ; while the fimbriæ, which before only covered a small portion of the ovaria, are gradually expanding themselves, so as to grasp and completely enclose the ovaria. It is by the wonderful reciprocity of action at this time in these various parts, that the semen is applied to the surface of the ova-

ria, and the ova which have evolved and enlarged become fœcundated by the union of the ſemen with them.*

"On examining a doe rabbit, which I killed two hours and a half after ſhe had been admitted to the male, independent of the inward vaſcularity of the Fallopian tubes, and ſtrong periſtaltic motion, of the progreſſive attachment of the fimbriæ to the ovaria, and of the protruding condition of ſeveral ova in them, I do declare, that I diſcovered a fluid in colour and conſiſtency exactly ſimilar to æther, and which ſpread itſelf as æther is wont to do, when rubbed between the fingers, ſupported by that portion of the expanded fimbriæ which had not yet graſped the ovarium. I firmly believe that this was the fluid deſtined to impregnate the ova. I do not, however, wiſh to dwell too long on one ſolitary fact, when the analogy is ſo ſtrong and ſo general, that it cannot be reſiſted. The union of the ſemen to the ova is proved directly in the whole inferior order of animated beings I have examined—in the amphibia, in fiſh, and in vegetables; why then ſhould it be denied to the higher claſſes? For no other reaſon than the mere ſuppoſition that 'it is abſorbed from the vagina, and conveyed to the general ſyſtem, where, by its peculiar ſtimulus, it produces the changes which happen *after* impregnation in the uterus; its appendages and the breaſts perfecting what the ſtimulus of coition had begun.' This is the mere *ipſe dixit* of certain writers, unſupported by proof, refuted by analogy, ariſing from ignorance of the true end for which the act of coition is deſigned.

"In proportion as we aſcend in the chain of animated exiſtence, we find a conſiderable abatement in the effects which œſtrum alone produces; the power and diſpoſition to action in the generating organs progreſſively diminiſhes, requiring cauſes of a more active nature than we behold in the lower orders. The power which the female of oviparous animals poſſeſſes of evolving the ova ſhe contains, when the ſeaſon for fœcundation is preſent, does not extend to the animals of a higher claſs, by virtue of that power alone; a neceſſity abſolutely exiſts that in them ſexual union ſhould take place, not only for the proper ſecretion of ſemen, but for the evolution of the ova. The excitement which the ovaria ſuſtain during, and in conſequence of that act, conſtitutes the only means by which the ova can evolve, and become ſeparated from the capſules in which they are encloſed; in the lower orders, a total ſeparation of the ſemen and of the ova enſues, although no ſexual unions have happened.

"The fact is proved by the pollen of vegetables, by the ſemen and ova of fiſh, and of the amphibia which I already ſtated. Being ſolicitous to ſee what change the ovaria underwent by the

* The author has given in detail all the experiments that illuſtrate the ſubject of animal fœcundation in his Syſtem of Phyſiology lately publiſhed.

power of œstrum alone, I took a female rabbit that had the œstrum upon her, and had her fed upon oats, beans, cellery, and other kinds of food, which the rabbit-keeper told me had the strongest tendency to increase that state. I had her placed before a buck; they were allowed to caress each other whilst absolute union was prevented; I pursued this plan for a week, and at the time that the œstrum was at its highest pitch, she was killed. On examining the different organs subservient to the process of generation, I found them very different from what they are in a common state. The external membrane by which the vagina is lined was swelled and distended, and had acquired a black mulberry colour; on examining the uterus, I found its colour had undergone an equal alteration; it was of a purple hue, evidently arising from a præternatural quantity of blood that had been determined upon it. There was a large vessel running up the middle of both Fallopian tubes, enlarged to a considerable size, and completely distended with blood. The tubes before their termination at the fimbriæ were torquated and distorted in an extraordinary manner, having also a strong peristaltic motion; after running a short way above the ovaria, they bent downwards, terminated by a fimbriated expansion above the ovaria, a considerable portion of which they involved and enclosed. The ovaria appeared to have undergone a considerable degree of alteration also; the ova which the ovaria contained were swelled, and evidently more distinct than is usual, resembling in some degree the seed resident in the pericarpium of a ripe grape. Although it appeared very clear that some action had taken place in these parts, there was nothing like a separation from the capsule, as we observe in the ovarium of the hen, from the effect of œstrum alone (without sexual union). Œstrum alone therefore produces an evolution of the ova to a limited degree; it however appears from some experiments that were made by Mr. Cruikshank and Dr. Haighton, where one of the Fallopian tubes of a rabbit had been divided and obliterated, and the other left perfect and entire, and sexual union allowed, that the increased excitement which the female had undergone was sufficient to evolve the ova completely, and separate them from the ovaria.

" Although there were ova separated from the ovarium in the mutilated as in the perfect side, there was this grand and striking difference between both. In the perfect side where the semen could have access to the ovarium, there were fœtuses found as usual; on the mutilated side quite otherwise, there was not the least trace of a single fœtus to be discovered. Although there was not a single fœtus to be discovered in the mutilated side, both ovaria displayed the same appearance; the ova which the ovaria contained, I say, became equally evolved, the external tunic in both had burst, and several of the ova in both were discharged. The vesicles from whence the ova were discharged

were consequently left hollow, their parieties or sides gradually thickened; and these thickened calyces constitute what anatomists have called *corpora lutea*. The existence, therefore, of *corpora lutea* is a proof that the sexual act has been so far perfect as to produce this action within the vesicles; and that although it can take place without the application of semen to the ovaria, fœcundation is absolutely prevented without its palpable application. The conclusion therefore presses itself upon the mind with force irresistible, that, *the existence of corpora lutea is not the true and infallible test of animal impregnation*. It is not more the test of animal impregnation, than when we behold unfœcundated eggs expelled from the female of oviparous animals in general; in them, the separated part of the membrane is left jagged, and is exactly analagous to the corpus luteum of the higher order of animals.

" If male and female fish, of the same species, are separated from each other, although the spawn will be shed, fœcundation will be effectually prevented. If birds that usually copulate together, are cooped up separate, although the eggs will evolve and be deposited, they will be totally different from what we find when the sexual act has been accomplished: in the one case, they become putrid without being prolific; in the other, they become prolific without being putrid. Although the shell of a perriwinkle and the hide of a buffalo are different in their structure, they are destined to the same use, serving to protect from the operation of external causes the internal organisation of the animal to which it is subservient. We have no difficulty in admitting, that the cornuated uterus of a rabbit is destined for the same purpose as the oval uterus of the human species, the oviduct of a hen for the same purpose as the Fallopian tube of a woman; must it not then be allowed, that the ovaria of the one are in nature the same as the ovaria of the other? and that since fœcundation cannot take place without the application of semen to the ovaria, although *corpora lutea* do exist, that the presence of these is not the test by which we are to judge that fœcundation has actually taken place? The only certain test we can have that animal fœcundation has taken place, is by the actual existence of one or more fœtuses. It is not an effect produced from the energy of a power resident in one system or in one sex, but in two systems of different sexes; not in the male or female individually, but from the united action of both male and female together.

" From the various facts I have stated, I think we are warranted in concluding,

" 1st. That the act of sexual intercourse is the immediate cause, by the power of which the several organs in the male and female are made to undergo their separate, although correspondent changes.

" 2d. In the male the specific power of the testes is excited,

and femen in confequence produced; which femen is the immediate agent that contains the characteriftic properties of the mafculine fyftem, and is conveyed from the vagina of the female through the uterus, and received by the Fallopian tubes. In the female, the increafed vafcularity not only of the vagina but of the uterus and tubes, proves the capacity thefe parts poffefs of fympathifing with the fexual organs of the male.

"3d. That the Fallopian tubes conftitute the media of communication to convey the femen from the uterus to the ovaria, which they do by means of the periftaltic power which thefe tubes fo eminently poffefs; that in proportion to the evolution which the ova fuftain (in the veficles of the ovaria), a correfpondent change takes place in the fimbriæ; that the fimbriæ progreffively grafp the ovaria, and immediately apply the femen to the ova; that by the union of both, fœcundation takes place, and which conftitutes the proximate caufe of animal impregnation.

"In order to put fo difficult a fubject in as clear a point of view as I am capable, I fhall ftate it in different words, viz. the different changes which the feveral parts in the male and female undergo, all tend to one end, namely, the immediate contact of the fimbriated extremity of the Fallopian tubes to the furface of the ovaria; that an union might take place between the fluid which the fimbriæ convey, and the ova (of a mucus-like appearance) which the veficles difcharge; that it is the femen which communicates the characteriftic properties of the male; and the Fallopian tubes, the medium by which it is conveyed, in the fame manner as the fluid which the veficles difcharge, contain and convey the characteriftic properties of the female;—that the fimbriated extremity of the Fallopian tubes, is the immediate feat where this effect takes place; that the union of both conftitutes *conception*, or the immediate reception of a *living principle*, in which the fource and power of action effentially refides, and which participates the nature of both parents, by the combined action of whom it was produced *.

"It is not the farinaceous matter of which a feed is compofed, the animal gluten with which an egg is filled, or the atom of

* That fœcundation takes place either at the extremity of the Fallopian tube, or in the very calyx itfelf, which is formed by the action of the veficle after the fexual act, is not only very probable, from the appearance which the parts difplay, but the probability is greatly increafed from the adventitious circumftances which fometimes happen, when a fœtus is found refident either in the ovarium, or attached to the fimbriæ, or lodged within the body of the tube itfelf; or, what perhaps lefs rarely happens, when the embryo drops in either of thofe fituations, and becomes attached to fome part of the abdominal cavity: thefe are called extra-uterine cafes in general, each cafe receiving the particular denomination from the particular part in which it is found, as, abdominal, ovarial, fimbrial, and Fallopial.

mucus in which the primordia of the embryo are contained, which conſtitutes the power by the energy of which organiſation is elaborated, and action ultimately produced; each of theſe bodies is a chaos in all its parts, a *rudis indigeſtaque moles*; the mere matter of which they are compoſed, when deprived of this living principle, undergoes the uſual changes of decompoſition and decay, by the proceſſes of putrefaction and fermentation, and yields nearly the ſame materials by chemical analyſis.

"It is the living principle which the ſeed of vegetables and the fœcundated ova of animals contains, that conſtitutes the architect by which the machine is erected; it is the baſe on which the whole ſtands; it is the bond of its elementary parts, the cement that unites them in one whole; it is the efficient and primary cauſe from whence the individuality of every ſyſtem ariſes, and in which the form it aſſumes eſſentially reſides; it conſtitutes the power by which the human ſpecies differs from the brute, the brute from the vegetable, and the vegetable itſelf from formleſs and inanimate matter; it is the power by which formleſs and inanimate matter is converted into organs living and active, ſo that the various ſpecies of food which the vital power receives, are nothing more than the raw materials applied to it; it is the manufacturer that converts theſe materials, without power or intelligence, into different ſyſtems, through which the acorn becomes evolved into an oak, the infant foliage expanded into leaves, and the final cauſe of vegetable exiſtence attained; it is by virtue of a power in eſſence the ſame, though in character different, that the embryo of animals becomes evolved out of matter in kind the ſame, and models a ſyſtem conſiſting of organs and of fluids in their kind and operation totally different; and, finally, it is through the participation of this living power which the organs and fluids have received, that they become the inſtruments or means by which it accompliſhes the final cauſe of its exiſtence. *Life* may therefore be defined, *the principle* (i. e. *the efficient and primary cauſe*) *by the energy of which various ſpecies of matter are converted to one kind, under one ſyſtem, ſo that the matter thus converted poſſeſſes the power of reſiſting the operation of external cauſes, and of preſerving itſelf from putrefaction and decay.* It is to this power, I ſay, by the energy of which every living ſyſtem is protected and preſerved from decompoſition and decay, and by which the different ſubſtances it receives are aſſimilated and changed, that I attach the idea of life. The Vis Medicatrix Naturæ of Stahl, the Vis Vitæ of Haller, the Niſus Formativus of Blumenbach, the Living Principle of Mr. Hunter, the Excitability of Dr. Brown, and, finally, "Form," by that excellent philoſopher, Mr. Harris. The principle of life, therefore, as a cauſe, may be contemplated in the abſtract, as ſeparate and diſtinct from the matter into which it is received, and through which its actions are produced; it is by the evolution of the

living principle which animated beings possess, from a state of *dormant capacity* into energy and action, that they are capable of converting to their own nature the various substances on which they feed, and of making them assume the organisation and form of the system to which they are applied. Bread of the same precise quality, cut from the same loaf, or water drawn from the same brook, given to a man and to a dog, after having been digested by the stomach of both, will contribute to the particular organisation of each respective system. We behold a multitude of vegetables placed in the same medium, nourished and fed by water and air, in kind the same, and yet assuming an organisation and form totally different.

"If the power of organisation and of life therefore resided in the food, every vegetable and every animal that fed upon the same materials would be fashioned and modelled alike; for in all chemical changes the same cause uniformly produces the same effect. If it depended on a chemical cause, the changes which the food sustained would be regular and constant, the chyle produced, instead of being the same, would be generally different; it would vary in its properties according to the peculiar nature of the substances out of which it was formed; and, finally, if it depended on the mutual action of different parts of the food upon each other, independent of the digestive power of the organ itself, the change it sustained, like other chemical changes, would be constant and definite, and not liable to the remission we witness during the process of digestion; it is therefore lawful, and we are from necessity led to conclude, that the commutation food obtains in the living system, is a vital and not a chemical act; and that the efficient cause of this commutation does not arise from any active property which the food contains, but is owing to the vital power of the system in which it is received, and by which the new arrangement of its parts is formed; it is with a view of destroying these sensible qualities which different living systems receive, that their assimilating organs are essentially designed; they are designed to reduce substances of different kinds to one, that this one substance may be in harmony with the system, that it may be fitted for being acted upon, and converted by the specific power of various organs into different shapes; the aptitude, therefore, of the matter which every living system receives, can only arise out of its weakness or total privation. It is in this destitute state that we say matter is imbecile and inert, a mere *tabula rasa*, that has the aptitude of being acted upon without the power of resisting action; that has the power of being changed without the power of changing; of being modelled without the power of modelling, &c. It is thus that we can appreciate the dire ignorance of those materialists, who suppose that matter can convert *itself* into different organs, in fabric most deli-

cate, in action most extensive, in form most diversified; that by the congregation of these organs a whole system is constituted; that the result of this organisation is life, and out of this organised life, action and motion are produced, so that matter is the efficient cause, and life the effect only.

"Equally absurd is the opinion of those pure defecated philosophers who suppose that the oxygenous matter which vegetables in the day are constantly discharging from the whole external surface of their foliage as urinous and dead, constitutes the principle of life, in which all power essentially resides; the immediate and proximate cause of irritability in man!"

With still greater reason are we to deplore the Brunonian system, which proclaims life to be a *forced*, not an original state; that makes life the effect of action, instead of action the effect of life; that makes life to come out of the body instead of residing within it! *that makes this action, or excitement, in which the true cause of life consists, the effect of the exciting powers acting on the excitability!*

CHAP. III. Of PREGNANCY.

At the time of conception, and for some time after, the parts which form the small fœtus are so blended together, that one cannot be distinguished from another. The whole mass is then called an *ovum*. This ovum consists of four membranes; the placenta, or after-birth; the funis umbilicalis, or navel-string, leading to the child; and the surrounding watery fluid in which it floats. Before the child acquires a distinct and regular form, it is called *embryo*, and afterwards retains the name of *fœtus* till its birth. The increase and nutrition of the fœtus depend on its connection with the uterus, and will be explained elsewhere.

During the progress of impregnation the uterus suffers considerable changes; but, though it enlarges as the ovum increases, yet, in regard to its contents, it is never full; for, in early gestation, these are confined to the fundus only: and though the capacity of the uterus increases, yet it is not mechanically stretched, for the thickness of its sides do not diminish; there is a proportional increase of the quantity of fluids, and therefore pretty much the same thickness remains as before impregnation.

The gravid uterus is of different sizes in different women; and must vary according to the bulk of the fœtus and involucra. The situation will also vary according to the increase of its contents, and the position of the body. For the first two or three months, the cavity of the fundus is triangular, as before impregnation; but as the uterus stretches, it gradually acquires a more rounded form. In general, the uterus never rises directly upwards, but

inclines a little obliquely, moſt commonly to the right ſide; its poſition is never, however, ſo oblique as to prove the ſole cauſe either of preventing or retarding delivery: its increaſe of bulk does not ſeem to ariſe merely from diſtention, but to depend on the ſame cauſe as the extenſion of the ſkin in a growing child. This is proved from ſome late inſtances of extra-uterine fœtuſes, where the uterus, though there were no contents, was nearly of the ſame ſize, from the additional quantity of nouriſhment tranſmitted, as if the ovum had been contained within its cavity.

The internal ſurface, which is generally pretty ſmooth, except where the placenta adheres, is lined with a tender efflorefcence of the uterus, which, after delivery, appears as if torn, and is thrown off with the cleanſings. This is the *membrana decidua* of Dr. Hunter.

Though the uterus, from the moment of conception, is gradually diſtended, by which conſiderable changes are occaſioned, it is very difficult to judge of pregnancy from appearances in the early months. For the firſt three months the os tincæ feels ſmooth and even, and its orifice as ſmall as in the virgin ſtate. When any difference can be perceived, about the fourth or fifth month from the deſcent of the fundus through the pelvis, the tubercle or projecting part of the os tincæ, will ſeem larger, longer, and more expanded; but, after this period, it ſhortens, particularly at its fore-parts and ſides, and its orifice or labia begin to ſeparate, ſo as to have its conical appearance deſtroyed. The cervix, which in the early months is nearly ſhut, now begins to ſtretch and to be diſtended to the os tincæ; but during the whole term of utero-geſtation, the mouth of the uterus is ſtrongly cemented with a ropy mucus, which lines it and the cervix, and begins to be diſcharged on the approach of labour. In the laſt week, when the cervix uteri is completely diſtended, the uterine orifice begins to form an elliptical tube, inſtead of a fiſſure, or to aſſume the appearance of a ring on a large globe; and often at this time, eſpecially in pendulous bellies, diſappears entirely, ſo as to be out of the reach of the finger in touching. Hence the os uteri is not in the direction of the axis of the womb, as has generally been ſuppoſed.

About the fourth, or between the fourth and fifth month, the fundis uteri begins to riſe above the pubes or brim of the pelvis, and its cervix to be diſtended nearly one third. In the fifth month the belly ſwells like a ball, with the ſkin tenſe, the fundus about half way between the pubes and navel, and the neck one half diſtended. After the ſixth month the greateſt part of the cervix uteri dilates, ſo as to make almoſt one cavity with the fundus. In the ſeventh month the fundus advances as far as the umbilicus. In the eighth it reaches midway between the navel and ſcrobiculus cordis; and in the ninth to the ſcrobiculus itſelf, the neck then being entirely diſ-

tended, which, with the os tincæ, become the weakeſt part of the uterus. Thus at full time the uterus occupies all the umbilical and hypogaſtric regions; its ſhape is almoſt pyriform, that is, more rounded above than below; and having a ſtricture on that part which is ſurrounded by the brim of the pelvis.

The appendages of the uterus ſuffer very little change during pregnancy, except the ligamenta lata, which diminiſh in breadth as the uterus enlarges, and at full time are almoſt entirely obliterated.

The moſt remarkable change happens in the ovarium. A cicatrix of a roundiſh figure and yellowiſh colour appears in this body, called by anatomiſts the *corpus luteum*. It is always to be found in one of the ovaria; and in caſes of twins a corpus luteum often appears in both ovaria. It was formerly conſidered as the calyx ovi! but modern phyſiologiſts think it a gland, from whence the ſeminal fluid is ejected. In early geſtation it is moſt conſpicuous, when a cavity is obſervable, which afterwards collapſes; no veſſels appear at the centre of this cavity, which has the appearance of cicatrix, but all around that centre the ſubſtance is vaſcular.

During the progreſs of diſtention, the ſubſtance of the uterus becomes looſer, of a ſofter texture, and more vaſcular than before conception; its veins, particularly in their diameters, being enlarged in ſuch a manner as to get the name of *ſinuſes*; they obſerve a more direct courſe than the arteries, which run in a ſerpentine manner, anaſtomoſing with one another, and through its whole ſubſtance, eſpecially where the placenta adheres, where this vaſcular appearance is moſt conſpicuous.

The arteries paſs from the uterus through the decidua, and open into the ſubſtance of the placenta in a ſlanting direction. The veins alſo open into the placenta, and by injecting theſe veins from the uterus with wax, the whole ſpongy or cellular part of the placenta will be filled.

The muſcular ſtructure of the gravid uterus is extremely difficult to be ſhewn: in the wombs of women who die in labour, or ſoon after delivery, fibres running in various directions are obſervable more or leſs circular, that ſeem to ariſe from three diſtinct origins; viz. from the place where the placenta adheres, and from the aperture or orifice of each of the tubes; but it is almoſt impoſſible to demonſtrate regular plans of fibres, continued any length without interruption.

CHAP. IV. OF SPURIOUS GRAVIDITY.

THE various diſeaſes incident to the uterine ſyſtem, and other morbid affections of the abdominal viſcera, will frequently excite the appearance of utero-geſtation. Complaints ariſing from

a ſimple obſtruction are ſometimes miſtaken for thoſe of breeding; when a tumor about the region of the uterus is alſo formed, and gradually becomes more and more bulky, the ſymptoms it occaſions are ſo ſtrongly marked, and the reſemblance to pregnancy ſo very ſtriking, that the ignorant patient is often deceived, and even the experienced phyſician impoſed on.

Scirrhous, polypous, or ſarcomatous tumors in or about the uterus or pelvis; dropſy or ventoſity of the uterus or tubes; ſteatoma or dropſy of the ovaria; and vental conception; are the common cauſes of ſuch fallacious appearances. In many of theſe caſes the menſes diſappear; nauſea, retchings, and other ſymptoms of breeding enſue; flatus in the bowels will be miſtaken for the motion of the child; and in the advanced ſtages of the diſeaſe, from the preſſure of the ſwelling on the adjacent parts, tumefaction and hardneſs of the mammæ ſupervene, and ſometimes a viſcid or ſerous fluid diſtils from the nipple; circumſtances that ſtrongly confirm the woman in her opinion, till time, or the dreadful conſequences that often enſue, at laſt convince her of her fatal miſtake.

Some of the diſeaſes which in their incipient ſtate are apt to be miſtaken for pregnancy by the patient, will be treated of under the head of Female Diſeaſes, in a ſubſequent part of this work.

Falſe Conception.—Mola. Other kinds of ſpurious gravidity, leſs hazardous in their nature than any of the preceding, may alſo be claſſed under this head; diſeaſes commonly known by the names of *falſe conception* and *mola*: the former of theſe is nothing more than the diſſolution of the fœtus in the early months; the placenta is afterwards retained in the uterus, and from the addition of coagula, or in conſequence of diſeaſe, is excluded in an indurated or enlarged ſtate. When it remained for months or longer, and came off in the form of a fleſhy or ſcirrhous-like maſs, without having any cavity in the centre, it was formerly diſtinguiſhed by the name of *mola*.

Mere coagula of blood, retained in the uterus after delivery, or after immoderate floodings at any period of life, and ſqueezed, by the preſſure of the uterus, into a fibrous or compact form, conſtitute another ſpecies of mola, that more frequently occurs than any of the former. Theſe, though they may aſſume the appearances of gravidity, are generally, however, expelled ſpontaneouſly, and are ſeldom followed with dangerous conſequences.

CHAP. V. OF SUPERFŒTATION.

SOON after impregnation takes place, the cervix uteri becomes entirely ſhut up by means of a thick viſcid gluten: the

internal cavity is alſo lined by the external membrane of the ovum, which attaches itſelf to the whole internal ſurface of the fundus uteri; the Fallopian tubes alſo become flaccid, and are, as gravidity advances, ſuppoſed to be removed at ſuch a diſtance, that they cannot reach the ovaria to receive or convey another ovum into the uterus. For theſe, and other reaſons, the doctrine of *ſuperfœtation* is now pretty generally exploded; a doctrine that ſeems to have ariſen from the caſe of a double or triple conception, where, ſome time after their formation in utero, one fœtus has been expelled, and another has remained; or after the extinction of life at an early period, one or more may be ſtill retained, and thrown off in a ſmall and putrid ſtate, after the birth of a full-grown child.

The uterus of brutes is divided into different cells; and their ova do not attach themſelves to the uterus ſo early as in the human ſubject, but are ſuppoſed to receive their nouriſhment for ſome time by abſorption. Hence the os uteri does not cloſe immediately after conception; for a bitch will admit a variety of dogs while ſhe is in ſeaſon, and will bring forth puppies of theſe different ſpecies: thus it is common for a greyhound to have, in the ſame litter, one of the greyhound kind, a pointer, and a third or more different from both. This is another circumſtance that has given riſe to *ſuperfœtation* in the human ſubject, which can *only* happen when there is a double ſet of parts, inſtances of which are very rare.

The following inſtance of a *double uterus* in the human ſubject, is given in the Memoirs of the Medical Society of London, vol. IV. by Mr. Pole.

" This anatomical phenomenon," ſays he, " occurred to my obſervation by mere accident. Having delivered a patient of a child with a watery head, which died within a few minutes from the time of its birth, I begged leave of the parents to inſpect the head by diſſection, which was found to contain three half-pints of water; but this caſe being unconnected with the ſubject of the preſent deſcription, I ſhall not enlarge further upon it. After inſpecting the head, and ſewing up the ſcalp, the body was replaced in the ſhell or coffin deſtined for its interment; but obſerving the abdomen remarkably contracted, it ſuggeſted the idea of examining the ſtate of the inteſtines, in which there was no circumſtance worthy of notice; my attention was ſoon called off to obſerve this extraordinary luſus naturæ, which has proved an ample reward for opening the abdominal cavity.

" This is an inſtance of a *complete double uterus and vagina*; one fallopian tube and ovarium were affixed laterally to the fundus of each uterus in the uſual way. The fundi receded from each other ſo as to form a conſiderable depreſſion between them, which was gradually loſt as it advanced toward the cervix. That

Mr. Pole's case of a Double Uterus.

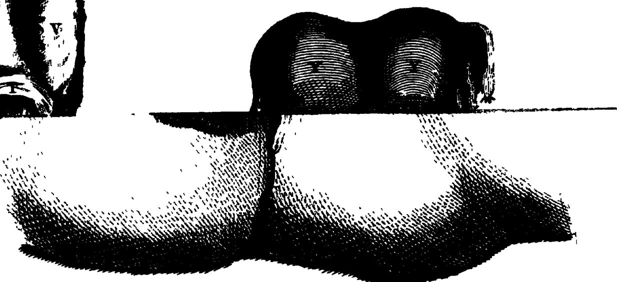
Fig. 1.



Fig. 2.



Fig. 3.



part where the ora tincæ were ſituated, was conſiderably larger than uſual externally.

"A ſeptum of conſiderable thickneſs ran between the organs which formed two diſtinct and complete vaginæ as well as uterine cavities: the ſeptum became thin as it approached the ora externa, between which it formed a projection conſiderably anterior to the verge of the vaginæ in other parts. Juſt below each os externum were two large lacunæ or blind pouches, in depth about the ſixth of an inch; and of ſufficient diameter to admit the round end of a very large probe; the mouths of theſe were naturally ſo diſtended by a firmneſs of ſtructure, and ſo large as almoſt to perſuade an obſerver that nature had heſitated in forming two other vaginæ. The Fallopian tubes admitted the paſſage of quickſilver into their reſpective cavities freely."

In Plate I. of this volume are Mr. Pole's repreſentations of this ſingular caſe, of which the following is an explanation:—

Fig I. *A general view of the parts.*

A. A. The two uteri. B. The cervices of the uteri. C. Superior part of the vaginæ expanded by the two ora uteri. D. D. The ovaria. E. E. The tubæ Fallopianæ. F. F. The fimbriæ. G. G. The ligamenta rotunda. H. H. The veſica urinaria, partly diſtended. I. I. The ureters. K. The oſſa externa. L. The two lacunæ. M. The meatus urinarius. N. N. The labia pudendi. O. O. The nymphæ. P. The præputium clitoridis. Q. The anus. R. The rectum.

Fig. II. *A poſterior view of the ſame reverſed, to give a better view of the two vaginæ.*

S. The lower part of the vaginæ where it approaches the perinæum. T. T. The two vaginæ cut through at the expanded part, immediately below the two ora uteri. V. V. The poſterior or internal ſurfaces of the labia pudendi. U. The rectum turned up. W. The veſica urinaria. X. X. The ureters.

Fig. III. *An anterior foreſhortened view of the two uteri, and their appendages.*

Y. Y. The two uteri. Z. Z. The two ora uteri. a. a. The ſuperior portion of the vaginæ ſurrounding and paſſing between the ora uteri.

The appendages will be eaſily underſtood from the explanation of fig. I.

CHAP. V. Of EXTRA-UTERINE, or VENTRAL CONCEPTION.

The impregnated ovum, or rudiments of the fœtus, is not always received from the ovarium by the tuba Fallopiana, to be thence conveyed into the cavity of the uterus; for there are instances where the fœtus sometimes remains in the ovarium, and sometimes even in the tube; or where it drops out of the ovarium, misses the tubes, and falls into the cavity of the abdomen, takes root in the neighbouring parts, and is thereby nourished: but as these fœtuses cannot there receive so much nourishment as in the succulent uterus, they are less, and generally come to their full growth before the common term.

Of these, some burst in the abdomen; and others form abscesses, and are thereby discharged; others dry, and appear bony, and remain during life, or are discharged as above, or by stool, &c. The following instances will sufficiently illustrate these peculiarities.

In the second volume of Transactions of the Society in London, instituted for the improvement of Medicine and Surgery, are the following observations on the case of a woman who died with a fœtus in the Fallopian tube, by Dr. John Clarke.

1. " B. C. when about forty years of age, supposed that she became pregnant in December, 1790, having missed her menstruation, which before that time, except when she was pregnant, had always been regular. The commencement of her pregnancy was attended with morning sickness, and the other symptoms which usually accompany that state. The sickness lasted about four or five months, after which she continued to increase in size till she had attained that of a woman at the conclusion of pregnancy, when she hourly expected to fall into labour.

" At this time she was attacked with violent pains, shooting from her back towards the navel, for three or four successive days, yet no advancement was made towards delivery. At last the pains left her, and never returned.

" This circumstance, added to the opinion of a person who attended her, induced her to think that she had been mistaken in imagining herself pregnant; and the more so, from finding, after some time, that her bulk gradually diminished.

" Some months now elapsed without her being sensible of any material alteration, except that of her general health declining, so that she had been several times confined to her bed for a week or two together. At length she began to feel constant pain near the middle, and towards the lower part of the cavity of the abdomen. This was succeeded by a swelling near the navel, which increased till it formed a tumor, the diameter of which was

from three to four inches. It ſhould be obſerved, that about two months before her admiſſion into the hoſpital, ſome ſmall openings took place on the ſurface, which diſcharged a very fetid fluid matter: theſe were healed in conſequence of local applications from time to time. The ſkin covering the ſwelling was very much ſtretched, and ſoon became extremely red and tender when touched. The contents of the ſwelling were evidently hard and irregular. After a little time an ulceration began to take place on the ſurface, extending from the navel a little towards the right ſide. This produced a communication with the inſide of the tumor, from which iſſued a conſiderable quantity of an extremely fetid, ſanious fluid. The opening gradually enlarging, ſeveral bones of a full-grown fœtus were diſcharged through it, as ſome of the ribs, vertebræ, the temporal bones, or parietal bone, half of the lower jaw, &c. Whilſt theſe bones were coming away, her ſtools became very offenſive, reſembling in their ſmell the diſcharge from the ſore at the navel.

"Soon after this the woman began to loſe her fleſh and ſtrength; her pulſe became weak, ſmall, and frequent; ſymptoms of great irritation ſupervened, and at laſt ſhe was cut off.

"Leave was obtained to examine the body, which was accordingly done. I was preſent when it was opened by Mr. Abernethy, by whoſe favour I am in poſſeſſion of the parts from which the drawings annexed to this paper were taken. Our attention was of courſe directed to the organs concerned in conception. The uterus was found to be in its natural ſituation, but nearly twice as large as when unimpregnated, and thicker in its ſubſtance. The peritonæal coat of this viſcus had become thicker than a crown-piece, in conſequence, as I ſuppoſe, of the inflammation communicated to it from the ſurrounding parts. In the cavity of the uterus nothing remarkable was found. The two Fallopian tubes were pervious from the uterus towards their fimbriated extremities, and as the parts were involved in ſome obſcurity from the effects of inflammation, ſmall bougies were introduced into their orifices, that their courſe might be more eaſily detected by diſſection. Upon tracing them, that in the left orifice led to the uſual termination of the tube at the fimbriæ: but that in the right led to a cyſt in which were contained the remainder of the bones, not diſcharged through the aperture at the navel.

"The anterior part of the cyſt had been attached to the peritonæum, lining the muſcles of the abdomen, ſo that there was no communication between it and the general cavity.

"The poſterior ſurface of the cyſt lay upon the meſentery, to which it had become cloſely united, ſo as to form one ſubſtance with it. The conſequence of this was, that a portion of the inteſtine very nearly ſurrounded the cyſt. (See fig. 1 and 2,

in Plate II.) Ulceration had alſo begun towards the ſides of the cyſt, which lay neareſt to the inteſtines, and had actually formed two openings into the inteſtinal canal, through which a part of the fluid contents of the cyſt had been evacuated during the life of the patient, giving the peculiar ſmell to the fæces, which has been before obſerved.

" The cyſt, at the time when it was examined, was no larger than barely ſufficient to contain the bones then in it, all of which were as perfectly free from the ſmalleſt appearance of cartilage, ligament, as well as of any other ſoft ſubſtance, as they could have been made by the niceſt diſſection and maceration."

2. In a preceding volume we have, from the pen of the ſame ingenious gentleman, the following hiſtory of a fatal hæmorrhage from a laceration of the Fallopian tube, in a caſe of an extra-uterine fœtus.

" The ſubject of this caſe was a married woman, about thirty years of age. Previouſly to the attack of the complaint which deſtroyed her, ſhe had been occaſionally ſubject to ſome bilious complaints: in all other reſpects ſhe had enjoyed a tolerably good ſtate of health, and had borne one child. About two months before ſhe died, ſhe perceived a return (as ſhe thought) of what ſhe called her bilious complaints, on account of which ſhe took, of her own accord, ſome medicines, which ſhe had been accuſtomed to employ upon ſimilar occaſions; and ſhe paid ſo little attention to an obſtruction of the menſtruous diſcharge for one period, as never to have mentioned it to her huſband, nor to her apothecary, until a few days before her death.

" On the 12th of May, 1791, ſhe went into a warm bath, with a view to relieve her bilious complaints, and on Friday, the 13th of the ſame month, in the morning, without any previous exertion, ſhe was ſuddenly ſeized with a violent pain in the lower part of her belly, on account of which ſhe lay down upon a ſofa in the room, where ſhe fell into a fainting fit, from which, after a few minutes, ſhe recovered.

" At this time ſhe ſent for her apothecary, a very ſenſible and intelligent man, who, as ſhe ſtill complained of great pain, took away about eight ounces of blood, ſuppoſing that there might be inflammation in ſome part of the cavity of the abdomen, and directed her to take ſome laxative medicines, in order to evacuate the inteſtines, which were attended with the deſired effect. The pain, however, ſtill remaining, he exhibited an opiate to procure relief, which it did in ſome degree, though not entirely.

" He kept the bowels open, and palliated the pain by anodynes taken internally, thrown up the rectum by clyſter, and applied externally by fomentation, which formed the plan of treatment, and was purſued uniformly through the whole courſe of the diſeaſe. Nevertheleſs the pain was not removed by theſe

means, but returned with great violence, by paroxyſms, both in the belly and near the loins, and was generally accompanied with vomiting, yawning, and fainting. The pulſe during all this time was not frequent, and the tongue was of its natural colour.

" By the frequency of theſe attacks her ſtrength was very much reduced; nevertheleſs, on Monday (May 16th) ſhe thought herſelf rather better in the courſe of the day; but towards the evening her pain returned with aggravated violence, and ſhe became extremely faint and low.

" At this time I was deſired to ſee her. I found her extremities in a cold ſweat: there was no pulſe at the wriſt; ſhe was exceedingly reſtleſs, and almoſt incapable of ſpeaking (though ſhe had within a quarter of an hour been very ſenſible); ſhe became in a few minutes more and more reſtleſs, more and more faint, and expired.

" After her death we were deſirous of aſcertaining by diſſection, if it were poſſible, the cauſe of this uncommon diſeaſe, which proved ſo ſuddenly fatal; and having obtained leave from her relations, we examined the body on the following day.

" Upon dividing the integuments over the cavity of the abdomen, we were ſtruck with the guſhing of blood in large quantity, which, when collected, amounted to nearly a gallon. It was partly fluid, and partly coagulated. When we had cleared away the blood, the viſcera preſented themſelves not only free from any appearance of inflammation, but even more pale than they are commonly found.

" We now ſought for the ſource of the hæmorrhage in the ſituation of all the large veſſels near the liver, ſpleen, meſentery, &c. but in vain. Upon taking hold of the uterus, it felt more pulpy than it commonly does, and was enlarged rather beyond its natural ſize in an unimpregnated ſtate. Paſſing the hand into the cavity of the pelvis, in the poſterior chamber, to wit, between the broad ligaments and the rectum, I perceived ſtill remaining there a quantity of coagulated blood. This I removed, and, after having carefully examined all the ſurfaces, diſcovered a lacerated appearance, ſurrounded with maſſes of coagulated blood, in what at that time ſeemed to be the right ovarium. I therefore cautiouſly removed the uterus with its appendages, and reſerved them for further and more accurate inveſtigation than could at that time be afforded.

" When the blood was removed from the part (which in the confuſion occaſioned by coagula appeared to be the right ovarium), a laceration was found to be in the Fallopian tube, about an inch and a half in length, each extremity of which was about an equal diſtance from the reſpective termination of the tube in the fimbriæ and in the uterus. The diſtenſion of the

tube at this part was nearly of the ſize of a large walnut, forming a kind of pouch. More of the coagulated blood being removed from the lacerated part, the ſhaggy veſſels of the chorion immediately appeared, interſperſed with ſmall coagula, and lying in contact with the internal ſurface of the pouch formed by the Fallopian tube: theſe being ſeparated, and the chorion divided, the amnios ſhewed itſelf, containing a fœtus perfectly formed, of about ſix or ſeven weeks growth. The Fallopian tube was pervious, both leading from the fimbriated extremity to the pouch containing the ovum, and from the pouch to the inſide of the uterus, ſo as to be capable of containing a briſtle. The diameter or calibre of the tube, between the fimbriæ and the pouch, was rather larger than it is uſually found in the impregnated ſtate. The right ovarium was the next object of examination, in which a large corpus luteum was found, occupying nearly half of the ſubſtance of the ovarium.

"Laſt of all the uterus was examined. This viſcus (as I have already remarked) had a pulpy feel, and was larger than it is commonly found in an unimpregnated ſtate. Upon cutting it open, two things worthy of notice appeared. Firſt, the whole of the cervix was filled with that gelatinous matter which is not found except in the ſtate of pregnancy. Secondly, the whole of the body and fundus of the uterus was occupied by the membrana decidua, into the cavity of which the briſtles inſerted into the two Fallopian tubes penetrated."

Such were the appearances in this ſingular caſe; to which, and the preceding, Dr. Clarke ſubjoins ſome intereſting obſervations.

"No fact in phyſiology," ſays the doctor, "appears to me to be better aſcertained, than that the power of conception in the female is altogether and excluſively confined to the *ovaria*; yet when the fœtus is once produced, it may be nouriſhed, and will grow in any living cavity, to which it may become attached, as well as in the uterus. All that it requires is nutrition, and perhaps the influence of pure air on the fluids of the fœtus; these, it appears, that other parts are capable of ſufficiently communicating.

"It has been objected to this opinion, in the caſe deſcribed in the former part, as pregnancy had only advanced a few weeks, it was poſſible that the proceſs could not be extended beyond that time in the Fallopian tube, and that this was the reaſon why it burſt. But many caſes on record, and that of this woman, clearly refute this objection, ſince it is evident, both from the hiſtory of the caſe, and the magnitude of the bones, that the full term of nine months muſt have been completed.

"There is another point not unworthy of obſervation in this caſe, and which has occurred in others of the ſame nature; that

pains exactly resembling those of labour came on at the end of nine months. I shall not attempt to explain this, but shall just remark, that it confutes all those theories respecting the cause of labour, which are founded on the presence of the child in the uterus.

" Another thing to be observed is, that the fœtus seems to have died as soon as the period of nine months was at an end. If we suppose that this depends upon any thing in the economy of the child, which will not allow it to subsist under the circumstance of a want of exposure of its blood to vital air after that time, it would prove a stronger resemblance in this respect of viviparous to oviparous animals than we have been generally disposed to admit, or than we have been well warranted in believing In the latter we know, that the internal structure of the egg regulates the time of its being hatched, more than the degree of heat to which it may be exposed, as is perpetually proved in the instance of placing hens' eggs under a duck, or ducks' eggs under a hen.

" There is another thing which ought not to be overlooked in this case. Whilst the fœtus continued to be alive, its presence in the Fallopian tube conveyed no particular sensation, or inconvenience to the mother, more than if had been in the cavity of the uterus, since it does not appear that she was aware of any peculiarity in this pregnancy, and she was certainly well qualified to judge, having been twice in that state before.—This, I think, proves that the sac formed in the Fallopian tube was in a sound state. If inflammation, or ulceration, had been gone on in it, some derangement of the system, or local inconvenience, would most probably have been the consequence, which could not fail to have conveyed sensations of uneasiness to the mother.

" But as soon as the child died, it began to produce the same effects on the surrounding parts, as any other dead animal matter would have done. In the present instance, the natural powers of the body seem to have been engaged in executing a particular operation. Inflammation was produced, the first effect of which was to unite the surface of the cyst to the interior surface of the peritonæum. After this, the sides of the cyst began to ulcerate, both where this adhesion had formed, and also where they lay in contact with the intestine. During all this time, the putrefaction of the child going on, every thing belonging to it, except the bones, was converted into an uniform sanious fluid.—At last, the ulceration having extended itself to the intestine, and to the skin covering the navel, this fluid was discharged, and afterwards some of the bones, when the farther effects of this process were interrupted by the death of the patient.

" If the woman had not been worn out by the irritation, there

is no reafon, *à priori*, why fhe might not have recovered *. Every thing was in a right train towards her perfect recovery. The bones had been in part difcharged, and the cyft was very much reduced in its capacity. It had once been large enough to contain the whole child, together with the placenta, and liquor amnii; but by the time of her death it was diminifhed, fo as barely to hold the bones, which ftill remained in it. A continuation of the fame procefs would have left the woman in the fame ftate as before fhe conceived; excepting the injury which the Fallopian tube muft have fuftained.

"With regard to the manner in which the cyft became lefs, I am apt to believe that this muft have depended on abforption, as the contents were evacuated; becaufe, although there is good reafon to fufpect, from the defcent of the ovum through it to the uterus, that the Fallopian tube is furnifhed with mufcular fibres; yet the thinnefs of the fides of the cyft feem ftrongly to oppofe the idea of its contraction depending either on mufcular action, or elafticity. If this had been the cafe, they would have become thicker, as happens to the uterus, the thicknefs of which is very much increafed by the contraction which takes place upon the expulfion of the child and placenta.

"We find in authors, and in detached papers publifhed by different focieties in Europe, a number of hiftories of extra-uterine fœtufes, of which fome have been found in the ovary, fome in the Fallopian tube, and others in the abdomen.

"Of thefe fome are detailed with accuracy; others are very obfcurely related; and a few are connected with circumftances fo improbable, as to merit little attention."

Upon an attentive confideration of thefe and fimilar cafes, Dr. Clarke concludes, that there are no fymptoms fufficiently characteriftic of conceptions in the Fallopian tube, to enable us to difcriminate between them and common geftation in the uterus.

"It further feems," fays he, "not to be an uncommon confequence of conceptions in the Fallopian tube, that the tube burfts. Of this accident the confequences will be various, and will depend on many circumftances.

"If the cyft fhould be ruptured near the part where the placenta adheres, an hæmorrhage muft enfue, which will be more or lefs in quantity according to the fize and number of the lacerated veffels.

"If the quantity fhould be very large, the deftruction of the patient muft follow, as happened in the cafe laft related. If,

* Mr. Jacob, of Feverfham, has defcribed a cafe in the 8th volume of the London Medical Journal, where the patient actually did recover, after all the bones of a fœtus had been in a fimilar manner evacuated from an abfcefs.

Fig. 1.



however, the lacerated part ſhould be of leſs extent, more diſtant from the attachment of the placenta, and if the number and ſize of the divided veſſels ſhould be ſmall, then either the laceration may be healed by the coagulated blood forming a living ſubſtance and uniting with the torn cyſt; or the extravaſated blood (if in ſmall quantity) may be abſorbed, and the laceration ſtill remaining, the ovum may grow on that ſide towards the cavity of the abdomen; and as, upon examination after death, the membranes would appear immediately within the parietes of the abdomen, this might give occaſion to a ſuppoſition that the ovum adhered to ſome part of the general cavity of the abdomen, when in fact the point of adheſion was to the Fallopian tube.

"Many of the ſuppoſed caſes of ventral conception have been ſo inaccurately deſcribed, as to leave room to conjecture, that they may have ſometimes been of this kind. There are ſo many obſtacles to prevent the ovum, when firſt detached from the ovarium, from acquiring an adheſion in the cavity of the belly, where the inteſtines, bladder, &c. are from the very nature of their functions in perpetual motion, as to make the poſſibility of it very doubtful."

Fig. I. *in* Plate II. *exhibits an anterior View of the Parts concerned in the firſt Caſe deſcribed by Dr. Clarke.*

1. Part of the common integuments of the abdomen, ſhewing the ulcer through which the bones were diſcharged during the patient's life.
2. A portion of the muſcular parietes of the abdomen.
3. Part of the ſmall inteſtines.
4. The uterus cut upon ſo as to ſhew its cavity.
5. The peritonæal covering of the uterus thickened by preceding inflammation.
6. Two bougies inſerted in the Fallopian tubes leading from the cavity of the uterus.
7. The termination of the left Fallopian tube at the fimbriæ.
8. The round ligaments.
9. Part of the broad ligament of the left ſide.
10. The vagina cut open, ſo as to ſhew its poſterior ſurface.

Figure II. *ſhews a poſterior View of the ſame Parts.*

1. A portion of the ſmall inteſtines.
2. Part of the uterus and vagina.
3. The round ligament, and part of the broad ligament of the left ſide.
4. The round ligament of the right ſide.
5. The bougie inſerted into the right Fallopian tube, and terminating at the fimbriæ.
6. The bougie inſerted into the left Fallopian tube, terminating in the cyſt, containing thoſe bones of the fœtus

which had not been difcharged through the orifice at the navel.

7. Two ulcerated openings in the inteftine communicating with the cavity of the cyft.

Explanation of figs. III. *and* IV. (Pl. III.) *referring to the fecond Cafe related by Dr. Clarke.*

Fig. III. A view of the Fallopian tube, with the laceration in it.—The chorion and amnios are feen, the latter containing the fœtus.—The dark fpots furrounding the chorion reprefent the coagula of blood formed at the extremities of the uterine veffels. The briftles are inferted in the two extremities of the Fallopian tube. The upper leads to the uterus; the lower to the fimbriæ.

Fig. IV. *View of the Cavity of the Uterus.*

A. The mucus in the cervix of the uterus, formed in confequence of pregnancy, which is with difficulty expreffed in an engraving.

B. The decidua, extending over the whole cavity of the body and fundus of the uterus.

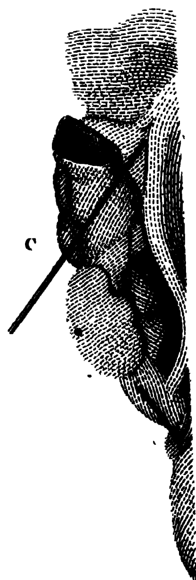
C. A fide view of the rupture of the Fallopian tube, and the fœtus feen fufpended in the amnios.

The following cafe of an extra-uterine abdominal fœtus extracted by an operation, by the late Dr. Charles M'Knight, of New York, was communicated by Dr. Meafe, of Philadelphia, to the Medical Society of London.

"The woman became pregnant twenty-two months previous to the operation; the nature of the cafe was rendered unqueftionable, by the common fymptoms of pregnancy, which proceeded regularly from conception to labour. The menfes ceafed, the woman grew lufty, had the ordinary complaints, and at the proper time felt the motion of the child, which grew ftronger, &c. as in fimilar cafes. At the end of nine months fhe was taken with labour pains, but no child prefented, and after fome time the pain ceafed, but without any diminution of the patient's fize; fhe left her chamber and betook herfelf to her ordinary avocations with good health, but an uneafy mind. Under thefe circumftances fhe came to town, and confulted different gentlemen of the faculty, who all agreed as to the cafe, but differed refpecting the treatment, whether the operation fhould be immediately performed; or, as the woman enjoyed good health, and as it was impoffible to afcertain the parts which the placenta adhered to, or which it might be neceffary to injure, in the complete extirpation of the fœtus, that the operation fhould be deferred until fomething like an external impofthumation fhould appear, that nature fhould thus point out the place and manner in which extraction fhould be performed. On the other hand Dr. M'Knight faid, that an immediate operation, before the woman's health became

Fig. 3.





injured, and before the contiguous parts ſhould ſuffer from compreſſion and putrefaction, was moſt adviſeable. The event has proved," ſays Dr. Meaſe, " that he was right; and I confeſs, from the obſervation I made during the operation, I am of opinion, that this reaſoning and practice will always be found ſo.

" The tumor of the abdomen lay conſiderably to the left ſide, and the protuberant part of the child could be diſtinctly felt, particularly a protuberance which was taken for, and proved to be, the head of the child in the left groin, and a leſs one ſuppoſed to be the knee, on the oppoſite ſide above the navel. The woman ſubmitted with great fortitude to the operation, which Dr. M'Knight began by an inciſion on the left ſide, ſomewhat above the navel, and a little beyond the junction of the rectus and oblique muſcles, which he continued to the pubes, and ſo near it as to divide one of the epigaſtric arteries. He operates boldly, and very ſoon penetrated the cavity of a ſac, which contained the waters and fœtus; as ſoon as the waters were diſcharged, he introduced his fingers, and extended the opening both upwards and downwards, which brought the cheek and one arm into view; the arm was taken out, and by it an attempt was made to extract the child, but it proved too large for the opening, and ſo found that no part gave way. I propoſed leſſening its bulk, and the bones of the head were taken away; it was then eaſily extracted, but ſtill the ſhoulders gave great reſiſtance; and ſuddenly yielding, the fœtus fell from his hand, and unluckily broke the navel ſtring, that was yet within the body of the mother; and although after ſearching for ſome time, he found a ſmall appendiculum, which he took for the broken end of the navel ſtring, yet he could never find the placenta, nor was any thing like the containing membranes of the child delivered. Theſe circumſtances gave me great uneaſineſs for the poor woman, and although, in ſome meaſure, reconciled to it, I did not care to examine by introducing my hand into the wound, but I was ſtruck from the appearance with this idea, that the whole membranes and placenta had united to the neighbouring parts, and formed a ſeparate ſac, connected in all its parts to the internal ſurface of the peritonæum; ſo that when the child was extracted, the hand was not admitted to the ſurface of the inteſtine, but to the inſide of the ſac; and as the placenta muſt neceſſarily lie on the outſide of this cavity, it, for that reaſon, could not be diſcovered and taken away; but whether this conjecture was true or not, neither placenta nor membranes were delivered; the lips of the wound were brought together, and they were left to ſlough off during digeſtion, which proved a dangerous proceſs; the diſcharge was very great, the ſloughs black, ichorous, and offenſive, and reduced the woman very much; nevertheleſs, however, ſhe has ſtruggled through it, and is now ſo far recovered as to go

about, and I am told by Dr. M'Knight, that the wound is healed to a very trifle without any ſinus."

Dr Meaſe has ſubjoined ſome remarks, on the impropriety of attempting to extract the placenta, ſhould a ſimilar operation in future be performed. The caſes on record prove, that when the ovum eſcapes into the abdomen, and grows in that cavity, the fœtus has neither the ſame envelopement of diſtinct membranes, nor the ſame large and perfect placenta, nor length of funis, which it poſſeſſes in its natural receptacle, the womb. Conſequently, as all parts of the ovum cloſely adhere to the ſurrounding peritonæum, any attempt to extract them would probably be injurious.

In the above-related caſe, it was not neceſſary to tie the funis. Should a fœtus be extracted at an earlier period, at the termination of nine months, with a view to its preſervation, as well as for the ſafety of its parent, a ligature on the chord might perhaps be neceſſary: this, however, is a circumſtance, which future experience muſt determine.

4. The following curious caſe of an extra-uterine fœtus diſcharged by the rectum, by Mr. Mainwaring, apothecary, is publiſhed by the Society for Medical and Chirugical Improvement.

" A. C. was of the middle ſtature, but well proportioned, and rather thin. She lived temperately; was married at the age of twenty-nine, and conceived very ſoon; but ſuffered more during her pregnancy, than is uſual in that ſtate.

" She miſcarried at the end of a few months, but recovered from this accident perfectly.

" Nine months after the miſcarriage, ſhe conceived a ſecond time, but being more attentive to her ſituation, ſhe arrived at her full time, and on the 26th of February, 1794, was delivered of a large and healthy male child.

" She ſuckled her child for a twelvemonth, during which time ſhe menſtruated regularly. Afterwards, about the beginning of February, 1796, the menſtrual diſcharge ceaſed for the ſpace of nine weeks, during which time ſhe ſuffered much from morning ſickneſs, and pains in the groins. Theſe pains extended over the whole of the pelvis, in the lower part of which, and alſo all over the pubes, a conſiderable ſenſe of fulneſs was complained of, attended with frequent and ſtrong deſire to go to ſtool.

" She had formerly been much ſubject to the piles, and at this time was troubled with them.

" She paſſed very ſmall quantities of urine, with much difficulty and uneaſineſs.

" On the 3d of April, 1796, ſhe was attacked with ſevere pains in the region of the uterus, accompanied with hæmorrhage, and they continued with little or no abatement for three weeks. She was expected to miſcarry, but no ovum came away. Under

these circumftances fhe was confiderably relieved by the ufe of fomentations, neutral falts, and opiates.

"On the 29th of May, while in bed, laying her hand upon the lower part of the abdomen, where fhe fuffered much pain, fhe perceived a hardnefs or lump a little above the left groin, and there was a throbbing in the part.

"Being at this time in the country, fhe returned in a few days to London, and upon a more particular examination being made, a tumor was likewife felt above the right groin, which in the courfe of two or three weeks extended almoft as high as the navel, but it was moft evident on each fide of the recti abdominis mufcles.

"A confiderable pain was complained of whenever even a fmall degree of preffure was applied to any part of the abdomen, but chiefly a little above the upper part of the tumor.

"This was the ftate of the cafe in the beginning of June; about that time a coffee-coloured fluid was difcharged from the urinary bladder, almoft without her poffeffing the power of reftraining it. The quantity nearly amounted to three pints in twenty-four hours. Before this period, the quantity of urine was lefs.

"The urinous difcharge probably contained fome portion of blood. A difcharge of blood was alfo found to come from the vagina, and it continued to appear in a fmall quantity until the end of September, 1796, when it entirely ceafed.

"She confented to be examined per vaginam (a fufpicion arifing of a tumor being formed in the pelvis), and a tumor was found in the hollow of the facrum, occupying its whole extent, and projecting fo much forward as nearly to fill the cavity of the pelvis. It feemed to lie between the vagina and the rectum, and was lefs than two inches within the pelvis, reckoning from the external orifice.

"The os uteri was altered in its fhape and fituation, being preffed againft the bladder and pubes. The cervix uteri was fo fixed in its fituation, as to refift any attempt which was made to move it upwards. From thefe circumftances the urine was paffed with difficulty.

"The fhape of the tumor in the hollow of the facrum (as far as it could be afcertained by examination with the finger) was nearly round, but fomewhat flattened upon the anterior part. In breadth it was fuppofed to be between three and four inches; and in thicknefs, from two to three. It felt moderately firm.

"It fhould have been noticed before, that the tumor in the pelvis was lower than that which is found in cafes of retroverted uterus; and that the pofterior part of the vagina was without the puckering, occafioned, in that difeafe, by the fundus uteri falling behind the vagina.

"The above remarks were made early in the month of July, 1796, about which time the abdomen had acquired the appearance it generally has in the sixth month of pregnancy.

"The patient observed, that by laying both hands upon the abdomen, and pressing with them lightly downwards, the tumor in the lower part of the pelvis seemed to descend in a small degree.

"The patient complained of so much pain (in July) over the whole of the abdomen, that she was bled, and the blood drawn was sizey. Fomentations and opiates were also used with relief. And it should be noticed, that to such means recourse was had three or four times during the space of sixteen months; in which time topical bleedings also were used twice.

"Towards the end of September, an obscure motion was sometimes felt by the patient in the abdomen, and the breasts were observed to secrete milk. The stomach was also much affected with nausea. From this time (Sept. 29, 1796) until December 23, she had no menstrual discharge. On that day the menses appeared, and returned with great regularity for the space of ten months.

"From the time of the renewal of the menstrual discharge, until the 10th of August, the patient had several attacks of pain in the abdomen and loins. The patient was in consequence reduced in flesh, and the tumor in the abdomen was more easily traced. It was found to be an uniform substance, for before this period, it was not possible to determine if it was one or more tumors.

"August 10, 1797, a second examination was made per vaginam, and for the first time it was observed, that the tumor in the hollow of the sacrum did not admit of so much pressure as was remarked ten months before, without occasioning painful sensations.

"The tumor was not found to have increased much in size, but its density was become so considerable, that it felt like bone, and in tracing the surface, it was not difficult to discern ridges, or (as it was supposed) sutures. Upon repeated and attentive examinations, the head of a fœtus was felt through the posterior part of the vagina.

"An attempt was now made to determine if the tumor in the vagina was connected with that in the abdomen, and by pushing the tumor in the pelvis upwards, that in the abdomen was perceived to be in a small degree elevated.

"The only material change discovered after the month of August was, that the tumor in the pelvis, when pressed upon, was more painful.

"Towards the end of September, the lower tumor was supposed to contain a fluid, and the bones, when lightly pressed,

could be made to recede. The patient became now more feverish, restless, and reduced in flesh.

" On the 22d of October, a discharge took place by the rectum: in colour and consistence it resembled pus, and the smell of it was very putrid. It was not found to be blended with the fæces, but came away between the stools, and occasioned a frequent and distressing desire to discharge it. The quantity each time was from one to two ounces.

" This discharge continued, without abatement in quantity, for the space of two months, and in a smaller quantity until the termination of the process.

" On the 29th of October, by straining the discharges, there were found small quantities of hair; this was seen several times.

" On the 25th of November, a strip of apparently ligamentous substance was discovered, and in two or three weeks another, each about two inches long.

" During this month, the distension of the abdomen became much reduced; and in the month of December, it was difficult to discover any resistance from the tumor above the pubes. That in the pelvis was found to have in some measure receded, or was lessened; but the bones contained in it were more evident, and a grating among them was easily perceived by passing the finger along the sac.

" About two inches up the rectum, in the anterior side, an aperture about as wide as a silver penny was discovered by Dr. Denman.

" On the 31st of December, 1797, two bones were found in the fæces, a radius and ulna; they were without epiphyses and periosteum, and were only one inch and a quarter in length.

" On the 2d of January, 1798, two bones of the thumb were found; and on the 5th, two of a finger; with part of a cervical vertebra, and also a tooth.

" On the 7th, the occipital bone was brought away with considerable difficulty and distress, by the patient assisting herself in some measure with her fingers.

" On the 8th and 9th, several bones of a lower extremity, with another tooth; and a third was found a few days after.

" By passing a finger up the rectum, through the aperture (which was now much enlarged), several bones of the head were readily felt. The patient not permitting them to be then extracted, they were suffered to remain until the 17th, when one of them being somewhat advanced, and giving her much uneasiness, it was brought away by turning the saw-like edges of the bone, which proved to be one of the parietal, towards its concave side, with the aid of a pair of dressing forceps, after a tedious and distressing trial; and on the 21st, the other was in the same

manner extracted, but without the patient suffering so much. Oil was previously injected each time.

" Immediately after the second parietal bone was brought away, one of the tibial was extracted.

" All the bones of the upper part of the head were without the pericranium, very thin, and brittle.

" On the 22d, with one of the frontal bones, several small ones were expelled; and on the 24th, the greater part of the basis of the skull, with a ligamentous and membranous substance, holding them loosely together. There came also on the same day several bones of a lower extremity, mostly of the foot; and each day, during the remainder of that month, several small bones were collected.

" On the 1st of February, came away the other frontal bone, the whole of the spine, and all the ribs attached to it; also a humerus with the scapula, the whole of the pelvis, and one thigh bone, all loosely connected together, with the intestines to the spine, and lying in the pelvis in a collapsed state, but little or no appearance of the other viscera.

" On the same day, came away a lower extremity from the knee, with its integuments and skin entire.

" This was the last part of the fœtus that was found in the discharge, and supposed to make the whole that belonged to it.

" About the 14th of February, there was found among the fæces a few pieces or shreds of apparently thickened membrane, having some resemblance to flakes of coagulated lymph, and of a yellowish white colour. This was supposed to have been part of a cyst, which perhaps had enveloped the fœtus.

" It appears that this process occupied a space of two years and about two weeks.

" During the last four months she was from weakness confined to her bed, and in a state of almost perpetual sweating, and seldom free from feverish affection; the pulse was generally at the rate of one hundred in a minute.

" She was considerably reduced in flesh; her appetite was much impaired during the whole time; and while confined to the bed, she took but very little sustenance; a few weeks, however, before the termination of this tedious and distressing trial, milk was found to agree with her stomach, and its good effects were soon evident.

" She also experienced much relief from opium, of which she took from two to six grains a-day:

" Attempts were frequently made to throw up clysters, but without success.

" As soon as the last expulsions had taken place, her amendment was most evident; her appetite became urgent, and she took food very often, every kind agreeing with her stomach.

Her flesh returned rapidly, and in less than three months her strength was restored.

"On the 8th of March following, she had pain in the lower parts of the abdomen, attended with diarrhœa, which left her in about twelve hours, and the following day the menses returned, which had not appeared for the space of three months. She did not experience any interruption in respect to menstruation; in the first return the quantity was comparatively small, but an increase was remarked at each period. and in the space of eight months it was found to amount to its usual quantity."

Mr. Mainwaring afterwards states, that in September 1799, Mrs. C. enjoyed uninterrupted good health. Her monthly periods were regular, but the quantity of blood less than was usual before her pregnancy. "She sometimes," says he, "complains of an uneasy sensation in the vagina; and, upon examination, the projecting part of the cervix uteri into the vagina, was found to be shorter upon the left side than upon the right. The vagina might be said to be somewhat constricted upon the left side, so that the cervix uteri was less moveable there than upon the right, and some pain was felt upon touching that part with the finger."

The cases above related offer the reader as much variety as can well be required; but those who wish to pursue the subject still further, will do well to consult Dr. Garthshore's authenticated cases of extra-uterine conception, published in the 8th volume of Memoirs of the Medical Society of London.

CHAP. VI. Of MONSTERS.

When two or more ova contained in the uterus attach themselves so near one another as to adhere in whole or in part, so as to form only one body with membranes and water in common, this body will form a confused irregular mass called *monstrous*; and thus a monster may be either defective in its organic parts, or be supplied with a supernumerary set of parts derived from another ovum. This seems a rational conjecture; but while every thing relative to generation is a mystery, how can we account for the extraordinary phænomena? Some authors enumerate a third species of monster, the product of a mixed breed, exemplified, for instance, in the mule, produced by the mixed generation of an ass and a mare. In this animal there are organical parts different from what pre-existed in the parents; there is a defect of some parts, a luxuriant growth of others; and the defect in the parts of generation, which renders the animal unfit for propagation, constitutes a very curious and particular species.

Of human monsters the records of midwifery furnish a great

variety of inſtances. We ſhall content ourſelves with laying before the reader a few of them, which modern practitioners have deſcribed. The following accounts appear in the Medical and Phyſical Journal.

1. Mr. Foſter, of Lacy, delivered a woman who had gone her full time, of a male child; both hands, one knee, one leg, and one foot of which were either ſingularly imperfect, or ſtrangely diſtorted, according to the following deſcription. It lived ſome hours, and was perfect in every other part.

The *right hand* was furniſhed with a thumb and fore-finger, perfect in their nails and joints; the other three were wanting. The ſpace they ſhould have occupied had much the appearance of a ſtump that had been healed after amputation. From the inner part of the wriſt were ſuſpended, by a ſlender filament, about an inch in length, two round fleſhy ſubſtances, one of them as large as a marble, the other ſomewhat ſmaller.

The *left hand* was deſtitute of both wriſt and palm, and terminated in one large finger, which had its nail and joints perfect, and was ſupported by a ſingle metacarpal bone, that moved upon the ſmall extremity of the ulna.

The *left knee* was deſtitute of a patella. A preternatural elongation of the thigh-bone impeded the outward motion of the leg, which was bent conſiderably inwards, and could move only backwards, and a little towards either ſide.

The *left leg* terminated abruptly in the baſis of the tibia, as it the foot had been long amputated from it.

The *left foot* was joined to the lower part of the leg in a horizontal direction. It had the fourth and fifth toes only. The ſpace which the others ſhould have occupied reſembled the defective part of the right hand. A kind of corn, evidently the effect of preſſure, grew from the outward ancle.

2. Mr. Pole, ſurgeon, in London, deſcribes the following caſe of malformation: The bones of the head, above the orbits, appeared almoſt entirely deficient; there were ſome ſmall portions of the oſſa frontis looſe and moveable about the globes of the eyes, which latter were concealed by the preſſure upon the eyelids: the cutis, on the right ſide, over the temple and ear, was preſſed outward in the form of a tumor. The mouth was ſtretched open, by the centre of the upper lip being drawn upward to a great extent, which expoſed the upper gums; theſe, as well as the lip, formed a ſort of angle in that part of the face where the noſe is uſually ſituated: there was in fact no noſe, but the two noſtrils opened near the internal angles of the eyes on each ſide; that on the left ſide appeared in the extremity of a projection, ſomewhat reſembling a proboſcis; that on the right, formed a longer and more incurvated orifice, with its edges in ſome degree projecting from an irregular ſurface. From this noſtril was continued to the

Monsters.

Fig. 1.

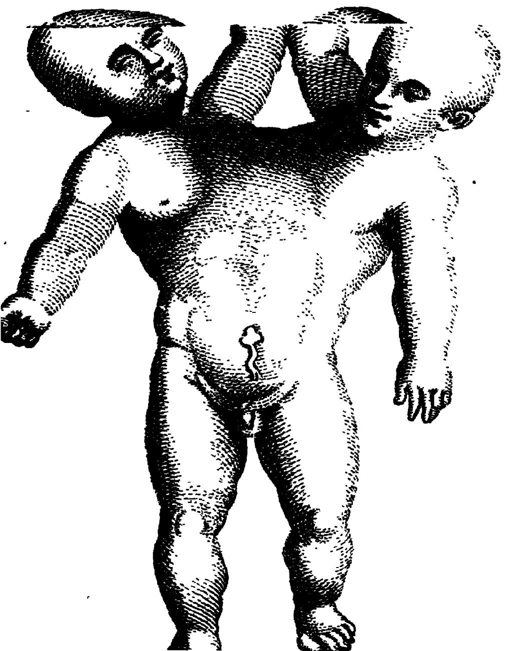


Fig. 3.



Fig. 4.



angle of the upper lip, a prominent ridge, conſtituted by a ſtretching of the cutis, rather than any bony ſubſtance reſembling the oſſa naſi. The ſummit of the cranium being entirely deficient, there was not ſufficient ſpace for containing the whole of the brain. This want of room was ſupplied by a large ſpherical ſacculus covered by the common cutis, ſituated principally over the left eye, and occupying the place of the left os frontis. It was about the ſize of a gooſe's egg, conſtituting an hernia cerebri. This tumor was very ſoft, falling in whatever direction the head was placed, and was connected by a baſe of about an inch and a half in diameter. The occiput was tolerably well formed, but appeared to be deficient towards its upper edge. The neck of the child was remarkably ſhort, and the thorax very prominent anteriorly.

The moſt ſingular circumſtance in this caſe, is the attachment of the placenta to the upper part of the child's head (diſtinguiſhed in the plate by a dark line paſſing from the left noſtril to the top of the ear on the ſame ſide), which was not by mere membranous union, but of its more ſolid and compact parts. The largeſt portion of the placenta lay over the occiput and ſcapulæ, and extended conſiderably to the right and left ſide of the head, ſo that in viewing the child, as it is repreſented in the drawing, its internal ſurface only is ſeen, with the upper edge bent backward: this attachment of the placenta was principally toward the right ſide of the head. The umbilical chord came from the placenta on the left ſide, and appeared to take its courſe down the ſame ſide of the body to the umbilicus, from which it had been ſeparated before it reached Mr. P.: about ſix or eight inches of it were left to the placenta when it came to his hands: near to the extremity of the chord a ligature was applied. At a ſmall diſtance from the origin of the funis there was a remarkable convolution of the umbilical veſſels, which gave it a peculiar appearance.—See Plate IV. fig. 4.

3. Dr. Flachſland relates a curious inſtance of monſtroſity, which is the more remarkable, as the ſame woman had been delivered three times of children that in every reſpect ſhewed in their ſtructure the ſame deviation from nature. The face, breaſt, and belly, were naturally formed, but the ſuperior extremities meaſured only $3\frac{1}{2}$ inches, and the right of the inferior extremities 4, the left $3\frac{1}{2}$ inches; they were, at the ſame time, bent inward in ſuch a manner that the heels were near the genitals. The fore arm, on both ſides, was entirely wanting, the humerus being united with the hand by two ligaments; but this union was not effected by a joint, as the condyle of the humerus and the ſuperior margin of the carpus conſiſted of a gelatinous ſubſtance. The tibia and fibula were likewiſe wanting on the inferior extremities, and the feet joined to the patella, in a ſimilar way, as was

observed on the superior extremities. All the intestines were naturally formed, and in a natural situation.

4. The following case of *lusus naturæ* is given by Mr. Humby, a practitioner in London.

"In October last," says the writer, "I was engaged to attend the wife of a respectable tradesman, who expected to be confined about the end of November, or beginning of December. I heard nothing of her till two in the afternoon of the 12th inst. when I was informed she was unwell, and expected soon to need my assistance. At half past three I was desired to visit her; I went directly; and on hearing her voice, was convinced that the pain she was then suffering was an expelling one. I found the head and shoulders born; they were involved in the membranes, which I ruptured at the neck, and slipped over the head; the child at this time apparently lifeless. I determined to wait the natural expulsion of the breech, &c. rather than hasten the delivery. In about five minutes, I received a mass of a very uncommon nature; the placenta I distinctly felt; I withdrew the whole with the child, and wrapped it in a flannel which lay at hand. My attention was then directed to the mother, fearful of hæmorrhage from so sudden a separation of the placenta. I proceeded to ascertain the state of the uterus, and discovered that its fundus was to be felt by deep pressure only, on a line with the pubes. I was now satisfied with respect to the safety of my patient, and proceeded to inspect the child; its appearance was so extraordinary that I was desirous of taking a more minute examination than I possibly could in the chamber. I was permitted to take it away in the evening; and on examination, in the presence of Dr. Ainslie, Mr. Earl, and Mr. Heaviside, the appearances were as follow:

"The head, perfect and natural; the thorax, very small, with a depression of the costæ on the right side; the arms perfect, but a stricture in the elbow joints, which prevented their full extension (this stricture attracted my notice immediately on rupturing the membranes); the spine shorter than usual, curved to the left side, so that the sacrum, &c. were in a horizontal position; the lower limbs, distorted and contracted; the left foot, perfect; the right, shapeless, with toes only; but the most remarkable appearance was the total want of abdominal muscles and integuments; the liver, stomach, and intestines (the larger ones distended with meconium) exposed; no omentum; the peritonæum, emanating from the thorax and curvature of the spine, hung over them as an apron, having no attachment at its inferior edge; the funis not more than six inches long; the placenta, natural, excepting a particular fatty appearance at its circular edge."

5. The following case of monstrosity is given by Mr. Pulley, of St. Thomas's hospital.

"About a fortnight ago," says he, "I was called to a woman who was delivered of a female child, full-grown, and, to all appearance, well formed in every part, excepting the head, and there was a deformity very remarkable. Both parietal bones were entirely wanting, and the whole of the frontal bone, except its orbitar processes, and that part which forms the nasal process: the upper part of the squamous portion of the temporal bone (on both sides) was wanting, but the mastoid and zygomatic processes could be distinctly traced, and the meatus auditorius externus seemed to be perfect; as much of the occipital bone as extended to rather beyond the crucial ridge was present, and the whole length of the upper edge was turned remarkably outward; the integuments on the os occipitis were, from the upper part of the neck, folded up in great quantity, and terminated by dipping down under the edge of the occipital bone, where the hairs were very numerous. As to the brain, there appeared but little, not more in quantity than the half of a common-sized orange, which was unequally divided by a longitudinal fissure: I would rather substitute the word excrescence for brain, for certainly the appearance had not much the character of the latter—no dura mater existed, and I believe no pia mater (at least, none on the surface; nor, in fact, could this be expected, there being no longitudinal sinus into which the vessels could empty themselves, nor was there any appearance of vessels). Pressure on this excrescence seemed to produce no effect; but on this I would not rest, as it certainly could not, in justice, be carried to an extent sufficient to give a decided result. The covering seemed only a common cuticle, which was, the day after the birth, abraded in several parts. The child lived about thirty hours, making continually a moaning noise, and breathing with extreme difficulty; at intervals it was seized with a general spasm, in which state it remained to appearance dead, for above a minute, when it revived by sudden and repeated gasps. In such a spasm it was carried off. The child took a little nourishment more than once, swallowing with much difficulty, which was heightened by the want of the palate. Neither urine nor fæces were evacuated."

6. In a subsequent number we have another case by the same gentleman.

"The subject was a full-grown female child, and was born dead. The imperfection of the cranial bones, was similar to the case before related, excepting that the os occipitis was nearly perfect, and its edge was not projected unnaturally outward. The integuments from the occipital bone, did not dip down under its edge, but passed on the brainy excrescence, and were there soon insensibly lost. The brain had a fungous appearance, and seemed not to be deficient in quantity; it was not made what is called hemispherical, by a longitudinal division, but appeared a con-

fused mass; neither dura nor pia mater apparently existed. The most curious part of this monstrosity was the existence of a dense semi-transparent membrane, which was attached to the left side of the summit of the excrescence, to the extent of about an inch. This membrane passed down to the left side of the face, and there formed several attachments; it adhered to the upper lip on its left side, producing a division in the lip, which exactly corresponded in appearance with what is termed the hare-lip; it also adhered to the left ala of the nose, and rendered the nostril on that side depressed and imperforate; it was also attached to the integuments on the cheek, just under the os malæ; which attachment, with the former, much distorted the left side of the face; its last adhesion was to the helix of the left ear, just above the lobule, which rendered the meatus auditorius externus imperforate, and produced a division of the ear leaving the lobe separated from the pinna. Perhaps I have expressed too much, in asserting, that no dura mater apparently existed, as Nature *might* originally have intended this membrane to have formed it. The admission into the meatus auditorius externus, through the concha of the right ear, was so covered by integument, that the head of a probe could only be introduced; the entrance to the right nostril was in the same way impeded; and the eye-lids of both orbits were completely united, except in having a similar small perforation; and when a probe was passed through each perforation into the orbital concavity, it could be passed freely about it, and seemingly to its bottom; from which I should conclude, that no eyes existed."

7. The foregoing productions gave occasion to a communication on the same subject from Mr. Custance, of Kidderminster.

"I remember," says he, "seeing one very similar about twelve years ago. I think the subject was a boy; it moved its limbs when first born a few moments, but never breathed. The parietal bones stood up on each side, and being somewhat crooked, had the appearance of small horns. There was no brain, but a small excrescence, which seemed to form the beginning of the medulla oblongata, and entirely destitute of the occipital bone. I made a preparation of this subject, which remained with the gentleman with whom I then lived. Some time in March last, I was called to the wife of a carpet-weaver, in this town, who was in labour. Upon touching, to ascertain the presentation, I had no doubt, from the soft sensation the part gave to my finger, that it was a breech case, and I fully expected a tedious labour; but, to my surprise, the very next pain protruded the head, and the whole body immediately followed. I now discovered the soft part I had touched, was a little nob just above the occiput, which supplied the place of a proper brain. There were no parietal bones, and so small a part of the frontal,

that the eyes seemed to stand on the top of the forehead. The face was regularly formed, but the back part of the head was quite flat, in a line obliquely backward from the frontal sinuses to the first vertebra of the neck. This monster was a girl, and quite motionless when born."

8. A monstrous human production, in which the *spinal marrow* was wanting, is described by Mr. Simmons of Manchester, and accompanied with some remarks that merit attention for their ingenuity.

"The mother," says Mr. Simmons, "was delivered at Bolton, by Mr. Barlow, to whom I am indebted for the history of the case, and for the fœtus itself. The only material circumstance in the former, was, the woman's positive assertion that she went two months over her time, which, however, I am inclined to doubt, and would rather suppose that she had committed an error in her reckoning. In the cases most analogous, the birth has been usually premature, generally at the seventh month, and it happened so in my former case.

"In this child, the upper part of the cranium is entirely wanting; and there remains only a thin plate of bone, covered with a doubling of membrane, in place of the cervical and the greater part of the dorsal vertebræ. This fold contained no medulla, though it exhibited, on being slit open, some slender fibrils, which might be construed into nerves; I should compare it to the proper coverings of the medulla spinalis, of a thinner texture. Lower down, a displaced portion of vertebra appears, which was hollow, but contained no medulla; the rest of the spine consisted of a solid column of bone, without any spinous processes. The child had, besides, a slight inversion of the feet, and a hare-lip on the right side; in other respects, it was full grown, and the colour of the skin was natural.

"There did not appear to be any deviation from the common structure and arrangement in the viscera of the thorax and abdomen: the heart, lungs, and thymus, occupying the former cavity, in their proper order; and the stomach, liver, spleen, kidneys, great and small intestines, &c. the latter. The larger intestines were also distended with meconium.

"In the chest too, I traced the phrenic nerves, descending to the diaphragm in their usual course; and in the neck, the par vagum, with its ganglia and intercostal, lying between the carotid artery and internal jugular vein. Though the eyes were outwardly well formed, I could not find by dissection any optic nerve.

"The nerves in the upper and lower extremities were, nevertheless, perfect; for I traced them in the arm and in the thigh, and in neither did I observe any difference in their number, size, colour, or distribution.

"This fœtus was ſtill-born, which, if I miſtake not, has always been the caſe when the brain has been wanting. However, the mother was not ſenſible, during her pregnancy, of any difference from what ſhe had been formerly accuſtomed to, either in her own feelings or in the motion of the child; and ſhe had had many children. The birth was marked by no particular occurrence; it would probably be facilitated by the reduced bulk of the head.

"In comparing the defective ſtructure of this child with the aſcertained uſes in others of thoſe parts of which it was deprived, I have been led to conclude, that nervous influence is not at all neceſſary to the growth of the fœtus in utero. At an early period after conception, it is highly probable, that the augmentation of the fœtus is maintained by the circulating ſyſtem alone; and that it is ſelf-evident from this caſe, that it can go on at a later, without either brain or ſpinal marrow, the nerves muſt grow like the other component parts of the body, and perfectly diſtinct from any other influence than that of the circulation.

"It is proved by experiment, that when the ſpinal marrow, or principal nerves, of a limb are divided, the parts below are immediately deprived of their ſenſibility, and become torpid; hence, we may reaſonably infer, that no peculiar property is reſident in the nerves themſelves. Aſſuming then, that the nerves ſerve merely to convey the influence of the brain and medulla ſpinalis, it is obvious, that when deprived of theſe ſources, they can impart none. Thus, it is evident, that although this fœtus had attained the full ſize, and its motions were not perceptibly different from another, yet, having no ſenſorium, it could poſſeſs no ſenſation.

"Throughout all nature we obſerve the wiſdom of Providence, in adapting the ſtructure of every animal to its peculiar mode of exiſtence. In the fœtus, we note ſeveral contrivances for the uterine ſtate, which become unneceſſary ſoon after birth; as the foramen ovale, the funis umbilicalis, and the ductus arterioſus; the thymus too may be numbered, though its uſe be at preſent unknown: others, as the lungs, then lie dormant, and are called into activity by its change of condition. But, to beſtow their proper functions on the nerves, would then be at leaſt a work of ſupererogation, as there is no object to which the impulſe derived from ſenſation could be deſtined. On the contrary, ſenſibility would expoſe it to hazards, which Nature has been ſedulous to avert, by depriving the funis of nerves, and by ſurrounding it with the liquor amnii.

"Mr. Barlow informs me, that he has repeatedly tried the experiment upon a preſenting upper or lower extremity, and that the reſult has always confirmed my opinion.

"As far as I have been able to determine, ſenſation is coeval with reſpiration; for when, after birth, reſpiration has been de-

layed, and during the pulfation in the funis no appearance of fenfation has arifen till the child began to breathe, the functions of the lungs, and of the nervous fyftem, were then roufed into activity in the fame moment of time.

"I purpofely avoid any further difcuffion, though the fubject is pregnant with much curious matter. My object now has been to prove,

"1. That nervous influence is not at all neceffary to the growth of the fœtus in utero; and,

"2. That the fœtus, in its uterine ftate, does not poffefs fenfation."

Cafes of monftrofity in all its capricious varieties might be produced if their production would anfwer any good purpofe here. No doubt the curious reader will be fufficiently gratified with the foregoing, together with the delineations in Plate IV. where fig. 1 reprefents the bony union which took place in a cafe of malformation. Fig. 2, reprefents the exterior figure in a cafe given by Dr. Bland in the Philofophical Tranfactions. Fig. 3, exhibits a monftrous union of the vifcera.

a Shews the heart of the left fide, with

b The aorta.

c The heart of the right fide, not more than one third of the fize of its companion.

d The pericardium common to both.

e e Portions of the diaphragm.

f The Vena cava.

gggg The inferior portions of each pair of lungs, with their feveral and diftinct pulmonary veffels. Thefe are drawn afide for the purpofe of fhewing the courfe of the principal veffels of the hearts on both fides.

hh The kidneys, with their blood veffels and ureters.

Of the difficulties attending the delivery of monfters, we purpofe to treat in a fubfequent chapter.

CHAP. VIII. OF THE MALFORMATION OF THE GENITAL AND MATERNAL PARTS OF WOMEN.

AMONGST the deviations of nature from her own purpofes it is not unufual to find inftances of fuperfluous or defective formation of the parts of women. Thefe indeed are inferior degrees of monftrofity; but as they fometimes happen to parts whofe functions are not exercifed in the early periods of life, no notice is taken of them till the age of puberty, or the feafon of uterogeftation. Of this nature are the various inftances of imperforated hymen, imperforated vagina, enlarged clitoris, &c. with certain peculiarities in the ftructure of the mammæ. The fimple

treatment required by the two firſt has been partly deſcribed under Surgery; nevertheleſs, we ſhall here ſubmit to the reader ſome curious inſtances recorded by different writers.

1. In his "Remarks upon Peculiarities in the Human Syſtem, apparently ariſing from Diſeaſe before Birth," Mr. Lucas, one of the ſurgeons to the Leeds Infirmary, ſays: "During my attendance as dreſſing pupil at St. Bartholomew's hoſpital, in June, 1765, an unmarried woman aged 29 years was admitted, in hope of obtaining ſome relief for a ſingularity in her ſex. The caſe was deſcribed by a ſurgeon, who remarked, that after being unable to diſcover any ſign of an uterus, he had made an inciſion near two inches deep in the vagina, but without any ſatisfactory effect. This patient was not only examined by the medical gentlemen belonging to the hoſpital, but alſo by many eminent accoucheurs. The general opinion appeared to be, that the uterus was not wanting, but that it was not in its uſual ſituation; to which Mr. Pott added, that its ſize muſt be defective. The mammæ were in no reſpect different, except that the papillæ were ſomewhat larger than common. The clitoris was perfect.

"The vagina was not one third of its uſual length, but its fundus might be puſhed a little higher; yet neither by that paſſage, nor by the rectum, could the leaſt veſtige of an uterus be traced. She had never menſtruated, nor had ſhe any ſymptoms of ſuch diſcharge being retained. Her noſe had for ſome years bled frequently, but not periodically; and when that evacuation ceaſed, a cutaneous eruption ſpread over moſt parts of her body.

"As ſoon as ſhe was made acquainted with the formation of the parts being ſuch as not to admit of being altered, ſhe ſeemed to regret that her ſituation had been divulged; and acknowledged, that a wiſh to be like the reſt of her ſex had produced her aſſent to expoſures, which ſhe could not otherwiſe have ſubmitted to.

2. "In November, 1780, S. M. aged 44, having mentioned to a phyſician, that ſhe had never menſtruated, and that ſhe apprehended this uncommon circumſtance was owing to ſome difference in her make, I was deſired to enquire into the cauſe. The external parts ſo much reſembled the former caſe as to render a particular deſcription unneceſſary. Neither when the urinary bladder was full or empty, by any examination whatever, could the leaſt ſign of an uterus be perceived.—On the 28th of December ſhe died, and on the following day leave was obtained to inſpect the body.

"From the diſeaſed ſtate of the lungs, it was rather matter of ſurpriſe that ſhe had lived ſo long. The abdominal viſcera were ſound: the veſica urinaria and rectum of their uſual ſize, and in their natural ſituation. In place of the uterus was a cavity lined and covered with the peritonæum, which, above the hollow, by its

duplicature, formed the ligamenta lata. The dimenſion of this vacuity was ſufficient to have contained an unimpregnated full-grown uterus. The ligamenta lata were, by numerous and ſtrong attachments, connected not only with the ſmaller inteſtines, but alſo with the pſoas muſcles. Behind the fundus of the veſica urinaria, and, in its flaccid ſtate at leaſt, a little above it, was a ſubſtance apparently glandular, about the ſize of a walnut, but in no reſpect formed like an uterus, ſituated more to the right than left ſide of the abdomen. This ſubſtance, as well as three imperforate chords connected with it, were included within the duplicature of the peritonæum. Theſe chords, which differed in thickneſs, were chiefly compoſed of muſcular fibres. The firſt was about the thickneſs of a crow-quill, and about two inches long; it deſcended from the centre of this ſubſtance towards the middle of the cavity already mentioned, but at its lower extremity was looſe, and totally unconnected.

" The ſecond chord was nearly the ſame thickneſs and length, and attached not only to the glandular ſubſtance, but alſo to a Fallopian tube, ovary, and round ligament on the right ſide.

" The third chord paſſed over to the left ſide of the abdomen, uniting, in a ſimilar manner, the left uterine appendages.

" Both the ſecond and third chords aſcended in their courſes, but on the left much more than on the right ſide.

" The ovarium upon the left ſide was not included within the ligamentum latum; but from that part of the ligament might be traced a ſmall imperforate chord, with which an ovary as large as that upon the right ſide was connected, ſituated within the abdomen, cloſe to the inguen. A ſtill ſmaller chord of a ſimilar ſtructure might be demonſtrated paſſing from this, through the abdominal aperture, to a leſſer ovary of a flatted form. This ſmaller ovary was ſo ſituated as that, from having been accompanied with violent complaints in the bowels, it had been twice ſuſpected to have been a ſtrangulated hernia.

" The poſition of theſe parts was much higher than natural; and their deſcent could not take place from the ſtrong attachments to the inteſtines and muſcles. It may not ſeem improbable that theſe adheſions were what prevented the glandular ſubſtance from being formed into an uterus, of proper ſize and ſhape.

" Why the growth of the appendages, which were not far ſhort of a natural ſize, ſhould have been equally impeded, ſeems dubious, except that their ſituation was leſs confined. The reſemblance of the external parts of generation in theſe two caſes make it highly probable, that the internal would not have materially differed.

" The firſt of theſe women had never been married; the latter had lived for ſome years with her huſband, and had alſo

cohabited with another man; from both of whom ſhe had parted under circumſtances of mutual diſſatisfaction.

"This deſcription would have been much more clear, if it had been in my power to have tranſmitted proper drawings; but there being no artiſt of ſufficient ability in this neighbourhood, ſeveral attempts proved ineffectual; and by this loſs of time the parts became too much injured to admit of a good preparation being made of them.

"The fœtus before birth is certainly no leſs capable of being affected by inflammation than the infant after it. Where inflammation takes place inflammatory exudation will frequently be the conſequence. From hence adheſions may often ariſe of force ſufficient conſiderably to obſtruct the growth, and occaſion other very material alterations in the ſhape of the parts ſo affected; producing various deformities, and eſſentially injuring the functions of whatever organs may chance to have been expoſed to its influence.

"The diviſion in the hare-lip; the imperforate ſtate of paſſages naturally open; the union of parts uſually unconnected, may ſeem to have ariſen from prior inflammatory affections; as alſo the deſcent of the teſticle to have been prevented by the operation of the ſame cauſe."

3. The following caſe of an extraordinary enlargement of the clitoris, by Mr. Simmons, ſurgeon to the British Lying-in hoſpital, in Brownlow-ſtreet, London, appears, with an engraving, in the fifth volume of the Medical and Phyſical Journal.

"On the 28th of February, 1800, Catharine Talbot, a healthy looking woman, about thirty years of age, was placed under my care," ſays Mr. S. "in the parochial infirmary of St. Martin-in-the-Fields, where ſhe had been admitted on account of her inability to follow her uſual occupation, which was that of working in the brick fields, and other laborious employments, from a ſwelling of great magnitude, as ſhe deſcribed it, hanging from her body; and which, upon examination, I found to be the clitoris enlarged to a moſt enormous ſize, gradually increaſing in bulk from its ſtem at the pubis. The circumference of the largeſt part meaſured fourteen inches, the circumference of the ſtem five inches, and the length of the tumor nine inches. Its general appearance was ſmooth and fleſhy, and its upper ſurface covered with cuticle, and not redder than the ſkin in general; round the bottom of the tumor, and all its under ſurface, it was very unequal, being made up of a cluſter of ſwellings of a globular form, of different ſizes, from thoſe of large grapes to the ſmalleſt; the colour of theſe was redder, ſomewhat tranſparent and ſhining, but not inflamed or painful to the touch. When the tumor was held up, a detached lobe from the right ſide hung lower than the reſt, having the ſame globular appearances at its

most depending part. The nymphæ and labia on both sides, especially near the perinæum, appeared as if taking on the same uncommon action with the clitoris, and felt more tender; which might arise from the weight and pressure of the tumor, as they were not much enlarged.

" The most singular circumstance was, that her general health was not at all affected; her appetite was good, and she menstruated regularly; nor did this enormous mass produce any pain except from its weight, which gave her an uneasy sensation at the scrobiculus cordis, which was always relieved by suspending the tumor, but which she was either in general too careless to attend to, or the necessary support too inconvenient to her to apply constantly.

" The account she gave of it was, that the part (clitoris) began to enlarge about four years ago, and without any apparent cause; that it went on gradually increasing in size for near three years, and that during the last year it had enlarged very rapidly. On questioning her very particularly, she confessed having had a slight venereal complaint when she was about 20 years of age, but had not the least doubt of her having been perfectly cured of it, having suffered no interruption to her health in any way till the commencement of the swelling.

" It will readily be granted that this was no common case; its extraordinary size and singular appearance necessarily rendered it an object of curiosity, and I occasionally took several of my medical friends to examine it; many of whom had seen instances of enlarged and diseased nymphæ and clitoris, but never any thing like the present. I saw no chance of relieving the poor woman without an operation; and she being also well convinced of her constantly remaining a burthen to herself and the world without its extirpation, she readily agreed to any plan I might propose.

" I determined therefore on using the knife, and requested Dr. Batty, Mr. Ford, Mr. Blair, and Mr. Morris, to favour me with their attendance on the 26th of March, when the operation was performed in the following manner:—A circular incision was made round the base of the swelling near the pubis, beginning at the inferior part on the right side, and ending on the opposite side, and afterwards continuing the dissection till the whole was removed. It was necessary to take up one vessel on each side; the three vessels of the clitoris were not materially enlarged, and were included in one ligature. The parts were dressed superficially, aud thirty drops of laudanum given her. I saw her again in the evening, and the laudanum was repeated; she slept well during the night, and was tolerably free from pain. On the 27th, some pain, tension, and inflammation of the labia came on, accompanied with fever; she took the saline mixture during the

day, and at night the opiate was repeated. She discharged her urine freely. On the 28th, the tension and pain were increased; and not having had a stool since the operation, she took a laxative medicine, which had effect. On the 29th, the dressings were removed, having been loosened by a beginning suppuration; she passed the day rather better. On the 30th, the discharge from the sore was considerably increased, and the pain and tension diminished; one of the ligatures came away. From this time the sore continued to discharge freely for a few days, when both the other ligatures came off, the patient feeling extremely happy at the thoughts of having got rid of so disagreeable a load, and with the prospect of the sore speedily healing; nor were her expectations disappointed, it gradually lessened in size, and by the 21st of April was completely healed, the labia, &c. assuming their natural appearance. She was discharged the infirmary before the end of the month.

" It must have occurred to those who have extensive practice in midwifery, to have observed children born with a peculiar conformation of the clitoris; instances where it has appeared considerably elongated, and covered with a large præputium, have given rise to mistakes of the sex of an infant, or have rendered it a doubt to which the child belonged. Specimens of this sort are to be seen in all anatomical collections, as well as examples of extraordinary enlargements of it in adults. And histories of such cases are to be met with in Riolanus, Bartholine, Schurigius, and others, some of whom believe the part endowed with a similar power to the penis in men. It would be of importance to discover whether any artificial means, or excess of venery, was capable of increasing its size; in the case above related, I could not discover that at any period of its enlargement it had the power of erection, or was converted to any improper purpose.

" It appears that an enlarged clitoris is almost endemial in some countries, particularly Egypt and Darfur, where the excision of it is very commonly practised, and the operation is performed a little before the period of puberty, or at about the age of eight or nine years. This custom is mentioned by Strabo, and also by Albucasis, in his 7th chapter, who observes, that every parent knows when a child has these parts longer than ordinary, and cut and burn them off while girls are very young. De Graaf was also acquainted with this, and gives his approbation of the operation as highly necessary as well as decent, "*Estque hujus partis chirurgia orientalibus tam necessaria quam decora.*" And Mr. Brown, our countryman, the celebrated traveller into Africa, tells us, that thirteen or fourteen young females underwent the operation in a house where he was. It was performed by a woman, and some of them complained much of the pain both at and

after it. They were prevented from locomotion, but permitted to eat meat; the parts were washed every twelve hours with warm water, which profuse suppuration rendered necessary; at the end of eight days the greater part were in a condition to walk, and liberated from their confinement; three or four of them remained under restraint till the thirteenth day. The reflection that naturally arises from this fact is, that there is no hazard in performing the operation at a very early period; and the success attending the extirpation of the prodigious one in the case I have related, is a sufficient evidence of the safety of an operation at a more advanced stage of the disease."

Figure 4, in Plate I. shews the upper, and fig. 5 the under, sides of the tumor; the weight of which was 28 ounces.

4. In the same work we find the following account of a lusus naturæ, by Mr. Alderson, of Hull, which merits a place in this chapter.

" Mrs. ——— informed me," says Mr. A. " that she had not been able to give suck to her three last children, because, when the draught came into her breasts, the milk *flowed out under her arms*. On examination, I found the mammæ small, and under the fold or lamella of the pectoral muscle on each side, in the fore part of the axilla, a large expanded gland, or small mamma, perfectly well defined, with a head or nipple like a small wart, formed by the tubi lactiferi; three of which were very distinctly observable upon pressure, producing a stream of pure milk the size of a crow quill.

" These glands uniformly became tumid, and filled at the same time with the mammæ, and as uniformly poured out the secreted fluid before the breast suffered any considerable distension. Whenever the child was put to the breast, the milk ran in a constant stream from these glands.

" She did not observe this peculiar conformation till after her second lying-in."

5. Cit. Larrey, of Paris, performed an operation upon a young woman, about twenty-five years of age, whose genital parts were imperforate. The skin was continued on the pubis, leaving only a small aperture for the passage of the urine. She had never menstruated. He opened the external skin, which covered the pubis, and thus restored the parts to their natural state.

6. The following instances of the *preternatural size of the nymphæ*, are related by Smellie.

" I was called," says he, " to a young woman, who, by a fall from an hay-loft, upon a post below, had bruised the labia pudendi: besides an inflammation of the parts, I found one of the nymphæ so preternaturally large, as to hang down three inches without the labia. Her mother was surprised to see such an extraordinary excrescence, which the daughter had concealed from

her knowledge, and desired me, after the inflammation was removed, to remedy, if possible this inconvenience, as the girl was to be married in a little time. The excision was accordingly performed with great ease, as that part next the labia was very thin. The patient could recollect no cause to which this excrescence might be owing; but said she perceived it when she was sixteen years of age; that it gradually enlarged, and frequently gave her much uneasiness, by itching, and being subject to pricking pains. The outward edge and extremity was about an inch thick, extending two inches from the upper to the under part. The cause did not seem to have been venereal, but merely a swelling of the glands."

Speaking of a second case of the like kind, he says, "I was present at the extirpation of the nymphæ, which were excessively large and pendulous in a woman, who alleged, that the disorder proceeded from a venereal taint, of which she had been formerly cured."

Mauriceau, in observation 313, mentions his taking off, by ligature, an elongation of the carunculæ myrtiformes.

7. This is followed by a case of obstructed *hymen*.

"A woman," says the doctor, "brought her daughter from the country for my advice. She had been a year married, and, in her own opinion, was in the eighth month of her pregnancy, although she was regular in the discharge of the catamenia. She affirmed, she had frequently felt the motion of the child, and was grown much bigger than her ordinary size. I examined the abdomen, but could not feel the circumscribed tumor of the uterus: indeed she was corpulent, so that the belly was large, though soft. I then directed her to lean forwards on the back of a chair, and seating myself behind, attempted to examine the uterus by the vagina, when I found the entrance obstructed.

"Through the persuasion of her mother, she consented to have the parts inspected; and being laid supine upon a couch, I separated the labia, when I perceived the hymen in the form of a crescent, from the middle of which proceeded a kind of ligament, attached to the lower part of the meatus urinarius, leaving a passage on each side, capable of admitting a probe into the vagina, and of yielding passage to the menstrual discharge, but effectually obstructing the introduction of the penis. Having snipt this attachment asunder, I introduced my finger into the vagina, and felt the uterus rising up before it, as in the unimpregnated state, without any sensible weight or stretching of the part. From this circumstance I concluded, and assured her, she was not with child; then introduced a large thick tent, dipped in red wine, and secured it with a bandage. After this operation she soon became pregnant, and has since been delivered of several children."

Hildanus (Centuria 3, Obferv. 60) gives three examples, in which the vaginal paffage was fhut up by a membrane.

The firft was a girl of fixteen, who was once a-month feized with violent pains in her belly, faintings, head-achs, and fometimes epileptic fits, which, on a copious bleeding at the nofe, vanifhed, and did not return till the next period.

She had refufed feveral advantageous matches, in confequence of thefe infirmities, which being communicated to our author, he infpected the pudenda, and, finding the vagina fhut up by a ftrong membrane, he directed an incifion to be made; but the young woman, being terrified at the thoughts of the knife, refufed to fubmit to the operation.

The fecond was a young woman of Paris, who, being married, could not admit the embraces of her hufband; and he, on that account, fued for a divorce; but as fhe fufpected herfelf with child, feveral eminent furgeons examined the parts, and found the entrance to the vagina fhut up by a ftrong callous membrane, in which were fmall openings, fufficient to allow the menftrual difcharge.

This membrane being dilated, and proper peffaries and applications ufed to keep the paffages open, the hufband was fatisfied, and the woman was, in fix months, fafely delivered of a full-grown child.

Mauriceau likewife (Obfervation 489) gives an account of a woman's having conceived, and been delivered of a child, though the hymen had not been broken in coition.

The third cafe of Hildanus, nearly refembles the following, communicated by Dr. D. Monro.

8. " A girl of fifteen had all the fymptoms of the menftrual difcharge, which continued to feize her regularly every month, though nothing was evacuated from the uterus. When fhe attained the age of nineteen, her belly was confiderably fwelled, and finding a large tumor in her pudenda, fhe applied for relief to his father, who immediately perceived it was occafioned by an imperforated hymen. This he forthwith opened with a lancet, which was inftantly followed by a difcharge of about three pints and a half of blood, of the confiftence of butter-milk, and colour of grumous blood, though without the leaft fmell or foetor: about half a pint of the fame fluid was evacuated before morning, and the girl did well."

The late Dr. Macaulay met with the following cafe:

9. " About feven years ago," fays he, ' I was defired to vifit young woman, about nineteen years of age, of a large make, and full breafted, who was in exquifite pain, and could not make water. Her belly being very much fwelled, her pulfe feverifh, and her pains exactly refembling thofe of labour, I ordered her to be blooded, a clyfter to be injected, and prefcribed fome other

medicines. Next morning I was informed more circumſtantially of her illneſs by her mother, who ſaid, ſhe had been complaining for ſome months, though pretty well at intervals; but now there was ſomething forcing down the genitals. In conſequence of this information, I examined her in a curſory manner, being then in a hurry. I found the belly very much diſtended, and, endeavouring to paſs one finger into the vagina, felt what I then took to be the membranes, with the waters puſhing pretty low down.

" From this circumſtance I concluded ſhe was in labour, and left her for the preſent, after having intimated to the mother, that a little time would in all probability determine the nature of her daughter's complaint. In my return I called again, and found the girl in exquiſite agony, though matters were not at all advanced during three hours which had elapſed in my abſence.

" Then it was I thought of enquiring whether ſhe had ever undergone the menſtrual diſcharge; when being anſwered in the negative, I examined more carefully, and found what I had miſtaken for the membranes, was no other than the imperforated hymen, protruded by ſome fluid as far as the external labia.

" Having, upon this diſcovery, ſignified the only and certain means of cure to the patient and her mother, and they conſenting to the operation, I divided the thick, ſtrong membrane with a knife, and evacuated, as near as I can gueſs, two quarts of thick, black blood. As it flowed out, and the great preſſure was removed from the neck of the bladder, the urine was diſcharged, and the poor girl ſaid ſhe found herſelf in heaven.

" She was afterwards ſeized with ſhiverings and faintings, for which I preſcribed cordials and the bark, upon a preſumption that the parts, from the long-continued preſſure, might be diſpoſed to mortification.

" She recovered very faſt, and was married in ſix months after the aperture was made."

10. Ruyſch (tom. i. Obſerv. 22) ſays, he was called to a woman in labour, whoſe hymen was entire, and prevented the delivery of the child, by whoſe head it was diſtended. An inciſion being cautiouſly made, he perceived another thick membrane further in the vagina, which being alſo opened, the woman was delivered.

Saviard (Obſerv. 4) relates the caſe of a young lady whoſe vagina was obſtructed by a membrane, which being cut, two pints of fetid matter, of the conſiſtence of lees of wine, were diſcharged.

He likewiſe gives an inſtance of the entrance to the vagina being ſo much contracted by the indiſcreet uſe of aſtringents, that a probe could hardly be admitted: but this opening was enlarged upon a directory, ſo as to admit a tent an inch and a half in circumference.

11. The following is a cafe in which the ovum became difeafed, and was entirely filled with fmall hydatids. It is related by Mr. Home, in the Tranfactions of the Society for Medical and Chirurgical Improvement.

"There are many cafes mentioned of the placenta lofing its natural ftructure," fays Mr. Home, "and becoming a congeries of hydatids; feveral of thefe have been publifhed; but in all the inftances on record, as far as I am acquainted with them, the patient had mifcarried, and the placenta was examined after being feparated from the uterus, fo that the difeafe could not be exactly afcertained.

"The following cafe, in confequence of its melancholy termination, afforded an opportunity of the parts being examined in their natural fituation, and of determining precifely the feat of the difeafe.

"Elizabeth Yeoman, thirty years of age, was delivered of her ninth child on the 22d of December, 1797, and recovered from her lying-in in three weeks, as fhe had ufually done after former labours. She continued in perfect health till the 1ft of Auguft, 1798, when a flooding came on, which was fuppofed to be an uncommon flow of menftrual difcharge; this continued for ten days; it created an alarm, and an accoucheur was confulted.

"He found, upon enquiry, that fhe had not menftruated before for twelve weeks, and there was an evident enlargement of the abdomen; he had therefore no doubt of her being pregnant, and thought fhe had advanced to the third month. From this explanation of the cafe, the prefent hæmorrhage appeared to be a flooding preceding abortion.

"The ordinary means for reftraining the flooding were ufed, and on the 14th it had entirely ftopped. She was now attacked by a vomiting, attended with a hot fkin, and a pulfe at 109. Thefe fymptoms were relieved by a gentle emetic, and faline draughts with rhubarb.

"On the 20th there was a return of the vomiting, with fpafms over the whole abdomen, and the general bulk of the belly became much increafed; thefe fymptoms refifted all means ufed for their relief, and fhe died on the 22d in the evening.

"Upon infpecting the body after death, the womb appeared to be of the fize that it ufually is five months after conception. The os tincæ was a little dilated, receiving with tolerable eafe the end of the finger.

"A longitudinal incifion was made through the anterior part of the uterus, extending from the os tincæ to the fundus; this incifion was continued through the membranes of the ovum, but no cavity was found, no fœtus prefented itfelf, and every part was occupied by an infinite number of hydatids of different fizes, from that of a pin's head, to the fize of a common grape,

fcarcely any of them being fo large as a full-fized grape. They were attached to the neareft furface, and to every part of the amnion equally.

"Upon feparating the membranes compofing the ovum from the uterus, which was eafily done, the fituation of the placenta was readily afcertained; it was near the os tincæ on the pofterior furface of the uterus, and was unattached, a feparation having taken place during the patient's life-time; this had occafioned the flooding, which gave the firft alarm refpecting her fafety. The furface next the uterus had not its ufual fhaggy appearance, but was nearly fmooth; it fcarcely projected beyond the membranes of the ovum, and was about two inches in diameter.

"The mafs of hydatids which filled the ovum were all connected with one another; were very tender, and readily broke down when handled. This mafs of hydatids was very different from thofe met with in the liver, which are fpherical, and thofe with long necks and heads, found in the brain of fheep; they were connected to the furface of the membrane, and to thofe hydatids with which they were united, by fhort pedicles or necks. To afcertain whether there was any appearance of a fœtus, I examined the whole with minute attention, but could not perceive the fmalleft remains either of one, or of a funis; nor could I on the inner furface diftinguifh any thing like the ordinary ftructure of the placenta.

"The hydatid ftructure of the placenta, as a difeafe to which that part is liable, is, I believe, very well known, and fpecimens of it are preferved in different collections of anatomical preparations. My attention in this cafe was directed to the inveftigation of the difeafe, and from the facts I have ftated, it does not appear to be a change in the ftructure of the placenta, but a general affection of the amnion. When this difeafe takes place, the natural healthy actions for the fupport of the fœtus are fo much impeded, that its growth is arrefted. This evidently happened in a cafe publifhed with an elegant engraving of the placenta and fœtus, by Dr. Denman; and when the patient does not early mifcarry, the fœtus difappears; and in all the inftances where mifcarriage has taken place in a more advanced ftage of the difeafe, I believe no fœtus has been found."

CHAP. VIII. Of the PLACENTA.

A correct knowledge of the ftructure of the placenta is fo important, that we can by no means omit the following remarks on it by that great anatomift Mr. Hunter *.

* This paper was read at the Royal Society; but as the facts had, before that time, been given to the public, it was not publifhed in the Philofophical Tranfactions.

"The connection," says he, "between the mother and fœtus in the human subject, has in every age in which science has been cultivated, called forth the attention of the anatomist, the physiologist, and even the philosopher; but both that connection and the structure of the parts which form the connection, were unknown till about the year 1754."

"The late indefatigable Dr. M'Kenzie, about the month of May, 1754, when assistant to Dr. Smellie, having procured the body of a pregnant woman, who died undelivered at the full term, had injected both the veins and arteries with particular success; the veins being filled with yellow and the arteries with red.

"Having opened the abdomen, and exposed the uterus, he made an incision into the fore part, quite through its substance, and came to what seemed to be an irregular mass of injected matter. The appearance being new, he proceeded no further, and greatly obliged me, by desiring my attendance to examine parts, in which the appearances were so uncommon. The examination was made in his presence, and in the presence of several other gentlemen whose names I have now forgotten; but I have reason to believe that some are settled in this country, who I hope will have an opportunity of perusing this publication.

"I first raised, with great care, a part of the uterus from the irregular mass, and in doing this, observed regular pieces of wax passing obliquely between it and the uterus, which broke off, leaving part attached to that mass; and on attentively examining the portions towards the uterus, they plainly appeared to be a continuation of the veins passing from it to this substance, which proved to be the placenta.

"I likewise observed other vessels, about the size of a crow-quill, passing in the same manner, although not so obliquely; these also broke upon separating the placenta and uterus, leaving a small portion on the surface of the placenta; and on examination they were discovered to be continuations of the arteries of the uterus. My next step was to trace these vessels into the substance of what appeared placenta, which was first attempted in a vein; but that soon lost the regularity of a vessel, by terminating at once upon the surface of the placenta in a very fine spongy substance; the interstices of which were filled with the yellow injected matter. This termination being new, I repeated the same kind of examination on other veins, which always led me to the same terminations, never entering the substance of the placenta in the form of a vessel. I then examined the arteries, tracing them in the same manner towards the placenta, and found that, having made a twist, or close spiral turn upon themselves, they were lost on its surface. On a more attentive view, I perceived that they terminated in the same way as the veins; for opposite to the mouth of the artery, the spongy substance of the pla-

centa was readily diſtinguiſhed with the red injection intermixed.

"Upon cutting into the placenta I diſcovered, in many places of its ſubſtance, yellow injection, in others red, and in many others theſe two colours mixed. The ſubſtance of the placenta, now filled with injection, had nothing of the vaſcular appearance, nor that of extravaſation, but had a regularity in its form, which ſhewed it to be naturally of a cellular ſtructure, fitted to be a reſervoir for blood.

"I perceived likewiſe, that the red injection of the arteries (which had been firſt injected) had paſſed out of the ſubſtance of the placenta into ſome of the veins leading from the placenta to the uterus, mixing itſelf with the yellow injection; and that the ſpongy chorion, called the decidua by Dr. Hunter, was very vaſcular, its veſſels going to and from the uterus being filled with the different-coloured injections.

"After having conſidered theſe appearances, it was not difficult for me to determine the real ſtructure of the placenta and courſe of the blood in theſe parts; but the company, prejudiced in favour of former theories, combated my opinion; and it was even diſputed, whether or not theſe curling arteries could carry red blood. After having diſſected the uterus, with the placenta and membranes, and made the whole into preparations, tending to ſhew the above facts, I returned home in the evening, and communicated what I had diſcovered to my brother, Dr. Hunter, who at firſt treated it and me with good-humoured raillery; but on going with me to Dr. M'Kenzie's he was ſoon convinced of the fact. Some of the parts were given to him, which he afterwards ſhewed at his lectures; and probably they ſtill remain in his collection.

"Soon after this time Dr. Hunter and I procured ſeveral placentæ, to diſcover if, after delivery, the termination of the veins, and the curling arteries, could be obſerved: they were diſcernible almoſt in every one; and by puſhing a pipe into the placenta, we could fill not only its whole ſubſtance, but alſo the veſſels on that ſurface which was attached to the uterus, with injection.

"The facts being now aſcertained, and univerſally acknowledged, I conſider myſelf as having a juſt claim to the diſcovery of the ſtructure of the placenta, and its communication with the uterus; together with the uſe ariſing from ſuch ſtructure and communication, and of having firſt demonſtrated the vaſcularity of the ſpongy chorion.

"It is not neceſſary at preſent to enter into the various opinions which have been formed on this ſubject; becauſe, whatever they were, they could not be juſt, the ſtructure of the parts not being known: neither ſhall I endeavour to give a complete deſcription of all the parts immediately connected with uterine

geftation, but content myfelf with defcribing the ftructure of the placenta, as far as it has any relation to the uterus and child; and with explaining the connection between the two; leaving the reader to examine what has been faid upon this fubject by others, efpecially by Dr. Hunter, in that very accurate and elaborate work which he has publifhed on the Gravid Uterus, in which he has minutely defcribed, and accurately delineated the parts, without mentioning the mode of difcovery.

"The neceffary connection fubfifting in all animals between the mother and the fœtus, for the nourifhment of the latter, as far as I know, takes place in two ways. In fome it is continued, and fubfifts through the whole term of geftation; in others the union is foon diffolved; but an apparatus is provided, which at once furnifhes what is fufficient for the fupport of the animal till it comes forth.

"The firft of thefe are the viviparous, the fecond the oviparous animals, both of which admit of great variety in the mode by which the fame effect is produced *. In the firft divifion is included the human fpecies, which alone will engage our prefent attention. But before I defcribe this connection, it may be neceffary that the reader fhould underftand my idea of generation: I fhall therefore refer him to what I have faid upon that fubject in my account of the free martin.

"In the human fpecies, the anatomical ftructure of the mother and embryo, relative to the fœtation, being well known, it will only be neceffary fully to defcribe the nature of the connection between them, which is formed by the intermediate fubftance called placenta. For this purpofe we muft firft confider the placenta as a common part; next, the uterus as belonging to the mother, yet having an immediate connection with the placenta, from which the nourifhment of the fœtus is to be derived; which will lead us laftly to a confideration of thofe peculiarities of ftructure, by means of which the fœtus is to receive its nourifhment, and which likewife conftitutes its immediate communication with the placenta. It is the ftructure of this intermediate fubftance, and its connection with the child and the uterus of the mother, which have hitherto been fo little underftood; and without an accurate knowledge of which, it was impoffible any juft idea could be formed of its functions.

"The placenta is a mafs lying nearly in contact with the uterus; indeed it may in fome degree be faid to be in continuity

* It may be remarked here, that the oviparous admit of being diftinguifhed into two claffes, one where the egg is hatched in the belly, as in the viper, which has been commonly called viviparous; the others, where the eggs have been firft laid and then hatched, which is the clafs commonly called oviparous, fuch as all the bird tribe; and many others, as fnakes, lizards, &c.

with a part of its internal ſurface. On the ſide applied to the uterus the placenta is lobulated, having deep irregular fiſſures. It is probable, from this ſtructure of the placenta, that the uterus has an inteſtine motion while in the time of uterine geſtation; not an expulſive one, which thoſe lobes of the placenta allows of; but all theſe lobes are united into one uniform ſurface on that ſurface next to the child, where its umbilical veſſels ramify. When we cut into the placenta, its whole ſubſtance appears to be little elſe than a net-work, or ſpongy maſs, through which the blood-veſſels of the fœtus ramify, and indeed ſeems to be principally formed by the ramifications of thoſe veſſels; it exhibits hardly any appearance of connecting membrane; but we cannot readily ſuppoſe it to be without ſuch a membrane, as there is ſo much regularity in its texture. The cells, or interſtices of each lobe, communicate with one another, even much more freely than thoſe of the cellular membrane in any other part of the body; ſo that whatever fluid will paſs in at one part, readily diffuſes itſelf through the whole maſs of lobe; and all the cells of each lobe have a communication at the common baſe.

"This ſtructure of the placenta, and its reciprocal communication with the two bodies with which it is immediately connected, form the union between the mother and fœtus for the ſupport of the latter. Prior to the time I have mentioned above, anatomiſts ſeem to have been wholly unacquainted with the true ſtructure of placenta. By notes taken from Dr. Hunter's lectures, in the winter 1755-6, it appears that he expreſſed himſelf in the following manner: "The ſubſtance of the placenta is a fleſhy maſs, which ſeems to be formed entirely of the veſſels of the umbilical rope." In another part, mentioning the appearances when injected, he ſays, "and upon a ſlight putrefaction coming on, you will find the whole appearing like a maſs of veſſels: then," ſays he, "there is always a white uninjected ſubſtance between the veſſels; but whether lymphatics or what I cannot tell." This uninjected ſubſtance, mentioned by Dr. Hunter, is what forms the cellular ſtructure.

"The placenta ſeems to be principally compoſed of the ramifications of the veſſels of the embryo, and may have been originally formed in conſequence of thoſe next to the uterus laying hold, by a ſpecies of animal attraction, of the coagulable lymph which lines the uterus. It might take place in a manner reſembling what happens when the root of a plant ſpreads on the ſurface of moiſt bodies; with this difference, that in the preſent inſtance the veſſels form the ſubſtance through which they ramify, as in the caſe of granulations.

"At the time, or perhaps before the female ſeed enters the uterus, coagulable lymph, from the blood of the mother, is thrown out every-where on its inner ſurface, either from the ſtimulus of

impregnation taking place in the ovarium, or in conſequence of the ſeed being expelled from it. But I think the firſt the moſt probable ſuppoſition; for we find in extra-uterine caſes, that the decidua is formed in the uterus, although the ovum never enters it; which is a proof that it is produced by the ſtimulus of impregnation in the ovarium; and that it is prior to the entrance of the ovum into the uterus. When it has entered the uterus, it attaches itſelf to that coagulable lymph, by which, being covered and immediately ſurrounded *, there is formed a ſoft pulpy membrane, the decidua, which, I believe, is peculiar to the human ſpecies, and to monkeys, I never having found it in any other animal. That part which covers the ſeed or fœtus, where it is not immediately attached to the uterus, and likewiſe forms a membrane, was diſcovered by Dr. Hunter, and is by him called decidua reflexa †. The whole of this coagulable lymph continues to be a living part for the time; the veſſels of the uterus ramify upon it; and where the veſſels of the fœtus form the placenta, there the veſſels of the uterus, after paſſing through the decidua, open into the cellular ſubſtance of the placenta, as before deſcribed. As this membrane lines the uterus and covers the ſeed, it is ſtretched out, and becomes thinner and thinner, as the uterus is diſtended by the fœtus growing larger, eſpecially that part of it, called decidua reflexa, which covers the fœtus; as there it cannot poſſibly acquire any new matter, except we could ſuppoſe that the fœtus aſſiſted in the formation of it. This membrane is moſt diſtinct where it covers the chorion; for where it covers the placenta it is blended with coagula in the great veins that paſs obliquely through it. more eſpecially all round the edge, where innumerable large veins come out; but the chorion and decidua can be eaſily diſtinguiſhed from one another, the decidua being leſs elaſtic.

" From the deſcription now given, I think we are juſtified in ſuppoſing the placenta to be formed entirely by the fœtus, which is further confirmed by extra uterine caſes, and by the formation of the membrane in the egg; there being no living organic part to furniſh them; and the decidua we muſt ſuppoſe to be a production of the mother; of both which, the circumſtance of the

* This is ſomewhat ſimilar to another operation in the animal œconomy. If an extraneous living part is introduced into any cavity, it will be immediately encloſed with coagulable lymph. Thus we find worms encloſed, and hydatids, that have been detached, afterwards encloſed; but in thoſe caſes this is a conſequence of the preſſure of the extraneous body; whereas in the uterus it is preparatory

† The placenta is certainly a fœtal part, and is formed on the inſide of the ſpongy chorion, or decidua. How far the decidua reflexa is a uterine part, we do not know; if it is, then the ovum muſt be placed in a doubling of the coagulum, which forms the decidua: but if the ovum is attached to the inſide of the decidua, then the decidua reflexa is belonging to the fœtus.

decidua passing between the placenta and uterus, may be considered as an additional proof. For if the vessels of the fœtus branched into a part of the decidua, we might conceive the whole placenta to be formed from that exudation; the portion of it, where the vessels had ramified, like the roots of a plant, becoming thicker than the rest, and forming the placenta. If that were the case, this membrana decidua, when traced from the parts distinct and at a distance from the placenta, should be plainly seen passing into its substance all round at the edges, as a continuation of it. But the fact is quite otherwise; for the decidua can be distinctly traced between the placenta and uterus, hardly ever passing between the lobuli: the vessels of the fœtus never entering into it, and, of course, none of them ever coming in absolute contact with the uterus. But what may be considered as a still stronger proof that the decidua is furnished by the uterus, is, that in cases of extra-uterine conception, where the fœtus is wholly in the ovarium or Fallopian tube, we find the uterus lined with the decidua, having taken on the uterine action; but no placenta, that being formed by the fœtus, and therefore in the part which contained it.

"The vessels of the fœtus adhering, by the intervention of the decidua, to a certain portion of the uterus when both are yet small, as the uterus increases in every part of its surface during the time of uterine gestation, we must suppose that this surface of adhesion increases also; and that by the elongation of those vessels of the fœtus in every direction, this substance should likewise be increased in every direction: this is in some degree the case, yet the placenta does not occupy so much of the enlarged surface of the uterus as one at first would expect.

"The vessels of the uterus in the time of gestation are increased in size nearly in a proportion equal to the increased circumference of the uterus, and consequently in a proportion much greater than the real increase of its substance. But when we reflect that the uterus ought not to be considered as hollow, but as a body nearly solid, on account of its contents, which derive support from this source, and that a much greater quantity of blood must necessarily pass than what is required for the support of the viscus itself, we cannot be at a loss to account for the greatly increased size of its vessels.

"The arteries which are not immediately employed in conveying nourishment to the uterus, go on towards the placenta, and proceeding obliquely between it and the uterus, pass through the decidua without ramifying; just before they enter the placenta, after making two or three close spiral turns upon themselves, they open at once into its spongy substance without any diminution of size, and without passing beyond the surface, as above described. The intention of these spiral turns would appear to be that of

diminifhing the force of the circulation in the veffels as they approach the fpongy fubftance of the placenta, and is a mechanifm calculated to leffen the quick motion of the blood in a part where a quick motion was not required. Thefe curling arteries at this termination are in general about half the fize of a crow's quill, and fometimes larger.

"The veins of the uterus appropriated to bring back the blood from the placenta, commence from this fpongy fubftance by fuch wide beginnings, as are more than equal to the fize of the veins themfelves. Thefe veins pafs obliquely through the decidua to the uterus, enter its fubftance obliquely, and immediately communicate with the proper veins of the uterus. The area of thefe veins bear no proportion to their circumference, the veins being very much flattened.

"This ftructure of parts points out at once the nature of the blood's motion in the placenta; but as this is a fact but lately afcertained, a juft idea may perhaps be conveyed by faying, that it is fimilar, as far as we yet know, to the blood's motion through the cavernous fubftance of the penis.

"The blood, detached from the common circulation of the mother, moves through the placenta of the fœtus; and is then returned back into the courfe of the circulation of the mother to pafs on to the heart.

"This ftructure of the placenta, and its communication with the uterus, leads us a ftep further in our knowledge of the connection between the mother and fœtus; the blood of the mother muft pafs freely into the fubftance of the placenta, and the placenta moft probably will be conftantly filled; the turgidity of which will affift to fqueeze the blood into the mouths of the veins of the uterus, that it may again pafs into the common circulation of the mother; and as the interftices of the placenta are of much greater extent than the arteries which convey the blood, the motion of the blood in that part muft be fo much diminifhed as almoft to approach to ftagnation; fo far and no further does the mother appear to be concerned in this connection.

"The fœtus has a communication with the placenta of another kind. The arteries from the fœtus pafs out to a confiderable length, under the name of the umbilical arteries, and when they arrive at the placenta, ramify upon its furface, fending into its fubftance branches which pafs through it, and divide into fmaller and fmaller, till at laft they terminate in veins; thefe uniting, become larger and larger, and end in one, which at laft communicates with the proper circulation of the fœtus.

"This courfe of veffels, and the blood's motion in them, is fimilar to the courfe of the veffels and the motion of the blood in other parts of the body.

"In addition to what I have faid about the connection between the mother and child, in natural cafes, it is neceffary to obferve,

that though the uterus is appropriated for the support of the fœtus, as best fitted for that purpose, yet it is not essential to its growth; as any other part in which the child may be situated, is capable of receiving the same provisionary stimulus for supplying it with nourishment as the uterus; and this, I believe, is peculiar to generation. This prompts me to make the following observations upon the different situations of the fœtus in extra-uterine cases which are extraordinary, happen seldom, and when they do occur, are often attended with so many hindrances to critical investigation, as hardly to allow of thorough or satisfactory information.

"Such cases are readily distinguished from natural ones, by the uterus being found entire and empty; and they may be divided into three different kinds, according to the situation of the fœtus in the ovarium, Fallopian tube, or in the cavity of the abdomen.

"From a want of the appearances which usually attend the natural process, the investigation of extra-uterine cases is attended with considerable difficulty. For where uncommon actions have taken place, as well as in cases of disease, the natural texture of the parts is very much altered, and appears to be lost; not only by the parts themselves being enlarged, but from having a great deal of new matter superadded to them, by which they lose their natural distinctness, and become less fitted for examination than those which only have a relation to them, and which preserve their natural actions peculiar to that state.

"From these difficulties, and a want of accuracy in those who made the examination, it is not at present clear, with respect to many of the extra-uterine cases upon record, whether they were ovarian cases, Fallopian-tube cases, or abdominal cases; when if they had been acquainted with the principle in which they differ, nothing could have been more easy than to distinguish them. It is not difficult, perhaps, at the very first view, to distinguish an abdominal case from either of the two first: for if the ovaria and Fallopian tube are entire, natural, and can be well distinguished to be as those parts are when the circumstances are natural, then we may be sure it is an abdominal case. Appearances, however, may not in all cases be distinct; but the parts may adhere, or be otherwise rendered so obscure, that an abdominal case might be confounded with either of the two first; therefore it is essential to have a characteristic difference established between the two first, and the third.

"The invariable difference between the two first, and the abdominal cases, will be in the vessels by which the child is nourished; for the arteries and veins belonging to the part in which the child is contained must be enlarged; which, being the increase of a natural part, will be readily ascertained, and the nature of the case as readily determined. We may lay it down as a principle, that when the spermatic artery, and veins of either

ſide, are enlarged in an extra-uterine caſe, that the fœtus is in the ovarium or Fallopian tube; ſince there are no other blood-veſſels which ſupply theſe parts: and if any other ſyſtem of veſſels, as the meſenteric, are increaſed in ſize, while the ſpermatic are in a natural ſtate, we may, with equal certainty, conclude the fœtus to be contained in the general cavity of the belly. As this becomes the great criterion, and as the ſituation and time will not always allow very nice inveſtigation on the ſpot, where the perſon employed has an opportunity of taking away the parts concerned, I would adviſe his taking along with them the aorta and vena cava, cut through above the origins of the ſpermatic veſſels."

Of the delivery of the placenta, under various circumſtances of labour, we purpoſe to ſpeak in a future chapter.

Chap. IX. Of the DISEASES of PREGNANCY.

After conception, a remarkable change is ſoon produced in the genital ſyſtem. This is the ſource from whence ariſe different ſymptoms that are however liable to conſiderable variation, not only in the conſtitution of different women, but in the ſame woman in different pregnancies, and at different periods of the ſame pregnancy.

Pregnancy, though a natural alteration of the animal economy, which every female ſeems originally formed to undergo, and hence not to be conſidered as a ſtate of diſeaſe, occaſions, however, ſooner or later, in many women, various complaints, which evidently depend on it as a cauſe.

Diſeaſes incident to the pregnant ſtate may be conſidered, either, 1. As ariſing from ſympathy in the early months; or, 2. As depending on the ſtretching and preſſure of the uterus, towards the more advanced ſtages.

I. Though the former of theſe complaints are generally to be accounted for from other cauſes than that of plethora; yet, in many conſtitutions, a certain plethoric diſpoſition in the early months of pregnancy ſeems to prevail in the vaſcular ſyſtem: and therefore, though many inconveniences may enſue from a too frequent, a too copious, or an indiſcriminate uſe of venæſection; yet, if prudently and judiciouſly employed. abortion by this means will not be endangered, as ſome late authors have alleged; but, on the contrary, on many occaſions, a ſeaſonable bleeding will be attended with the moſt beneficial and ſalutary effects.

In young women, ſuddenly affected with ſevere ſickneſs and loathing, febrile commotion, head-ach, vertigo, and other ſymptoms of breeding, more eſpecially in full ſanguineous habits, beſides a ſpare light diet and ſuitable exerciſe, recourſe muſt be had

to proper evacuations, the chief of which is venæſection: this may be ſafely performed at any time of gravidation, and occaſionally repeated according to the urgency of the ſymptoms; ſmall bleedings, at proper intervals, are preferable to copious evacuations, which in early pregnancy ought always to be carefully guarded againſt.

When the ſtomach is loaded with putrid bile or acrid ſaburra, the offenſive matter ſhould be diſcharged by gentle vomits of ipecacuan, or of infuſions of chamomile flowers. The violent efforts to retch and vomit, and the commotions thence excited, which often occaſion the expulſion of the fœtus, will by this means frequently be removed, or in moſt caſes greatly diminiſhed. During the term of breeding, the ſtate of the belly muſt be alſo attended to. When laxative medicines become neceſſary, thoſe of the mildeſt and gentleſt kind ſhould be adminiſtered.

In women liable to nervous complaints, where the ſtomach is weak, and the ſickneſs violent and continued, the patient ſhould be put on a courſe of light, aromatic, and ſtrengthening bitters; ſuch as infuſions of bark, columbo, &c. and her diet, air, exerciſe, company, and amuſement, ſhould be regulated: in order to ſettle the ſtomach, and leſſen the ſenſibility of the ſyſtem, opiates will often happily ſucceed, when every other remedy fails.

The following caſe of vomiting in pregnancy, ſucceſsfully treated by Dr. Vaughan of Leiceſter, appears to deſerve attention.

He deſcribes it to be a caſe wherein nauſea and vomiting, as attendants on pregnancy, occurred in a much greater degree than uſual, where theſe ſymptoms laſted much longer, and when the conſequences were of the moſt ſerious kind. He alſo informs us of the means which were employed to obviate them, and which ſoon proved effectual.

" A lady of a very delicate frame, with dark hair, much ſubject to nervous affections, found herſelf, in the 31ſt year, for the ſecond time pregnant. The nauſea and vomiting, which in that ſtate ſo frequently occur in a morning, in this inſtance tormented her not only in a morning, but during a greater part of the day; and although ſhe was now entered upon her ſeventh month, theſe were in no reſpect abated, notwithſtanding ſhe had employed a variety of remedies which had been recommended to her. It was in this ſtate of the lady's pregnancy," ſays Dr. Vaughan, " that I was firſt called to ſee her. I found her much emaciated, melting away under profuſe ſweats (the weather was very warm) whilſt in bed; to which a reduction of her ſtrength confined her almoſt altogether. If ſhe attempted to ſit up, ſhe was immediately fainting; and if ſhe was diſpoſed to ſleep, ſhe was perſecuted with ſuch horrid dreams, that it was her earneſt requeſt to her attendants to wake her as often as they found her aſleep. During this time, the quantity of food taken in 24 hours

was inconſiderable indeed; and though inconſiderable, was immediately rejected. The appetite was allowed to point at any kind of food, however ſingular (and ſometimes, we know, in this caſe ſingular enough it is), which it was my intention ſhe ſhould be indulged with; but this was in vain. Once or twice a very ſmall bit of broiled bacon was ſwallowed, and ſtaid longer than any thing; but the quantity was too trifling to admit an expectation that her exhauſted frame could derive ſupport from this. The moſt inſipid, as well as the moſt poignant food was placed before her; but without exciting an inclination on her part to partake of them. We did not ſucceed any better by placing a variety of fruits in the ſame ſituation; if any was ſwallowed, it was immediately rejected. At times ſhe found herſelf much annoyed by a large quantity of wind being confined in her ſtomach and bowels. By the importunity of her friends, ſhe was now and then prevailed upon to take a ſmall ſpoonful of burnt brandy for this laſt complaint; which generally gave her relief. Her thirſt and heat were inconſiderable; her pulſe beat under one hundred ſtrokes in a minute. Under all theſe miſerable circumſtances there were no appearances of a miſcarriage; on the other hand, the child gave the moſt active ſigns of being alive and well. The profuſe ſweating, with the terrible dreams, were not of more than ten days' ſtanding; but the vomiting had commenced at the earlieſt period, and inſtead of any abatement, it had manifeſtly increaſed to the pitch it was now arrived at Her apothecary had adminiſtered anti-emetics of the moſt eſtabliſhed character, and had been careful to prevent any accumulation of fæces in the inteſtinal tube, by the occaſional interpoſition of clyſters; but without gaining the leaſt poſitive advantage. In this emaciated ſtate, worn down with ſleepleſs nights, exhauſted by profuſe ſweats, terrified with horrid dreams, and teized with perpetual vomiting, I found this poor lady; and I will freely confeſs was much puzzled to form a plan of treatment which ſhould ſatisfy myſelf, and prove of uſe to her. Indeed I had no expectation that medicine was more likely to remain on the ſtomach than food and opium. Fixed air, with other anti-emetics, had been already tried, but in vain. It ſtruck me that the firſt point to gain was that of enabling the ſtomach to receive and retain food; for if this could be done, I had no doubt but her other ſymptoms would gradually diminiſh: the difficulty, however, appeared to be great. I was willing to hope that much of this complicated evil was founded on habit; and on this ground I took my ſtand. I at length determined to begin with abandoning every attempt to convey nouriſhment into the ſtomach by the mouth. It was my direction, that ſhe ſhould not on any account eat or drink, or at leaſt not ſwallow, any part either in fluids or ſolids. But although I gave up this avenue, in order to allow

the ftomach to remain in a ftate of quietude, unfolicited by ftimulus of any kind, except its natural contents; yet I did not mean to leave the fyftem unfuftained, but, on the contrary, to fupport it by a mild nourifhment thrown in by the inteftinal tube, and by the inhalents of the fkin. The lower bowels were firft emptied, by a clyfter of mutton broth: this being accomplifhed, a pint of new milk, juft taken from the cow, with 20 drops of laudanum, was ordered to be injected as a clyfter, morning and evening; and every endeavour to retain it was to be employed. Four ounces of bark were directed to be boiled in three gallons of fkimmed milk: and the feet and legs, being firft well rubbed with a warm cloth, were to be immerfed in this warm pediluvium for an hour, three or four times a-day; an anodyne liniment was alfo applied to the region of the ftomach. This comprehended the whole of the medical treatment fhe was then fubmitted to. This method was purfued fteadfaftly for three days with manifeft advantage; the milk was entirely abforbed morning and evening; her fweats were confiderably diminifhed; fhe had gained fome ftrength, and had been refrefhed with four hours' fleep the laft night, without being haunted with thofe terrifying dreams which had been the caufe of fo much diftrefs. On the fourth day from her beginning upon this plan, fhe enquired of the fervant if there was any cold meat in the houfe; expreffing a wifh to have fome brought to her. A plate full of cold boiled beef was immediately produced, which fhe eat with great pleafure, and drank with it a pint of fmall beer. This never gave her the leaft annoyance. She continued from that time to take her food well, went her full time, and was brought to bed of a healthy child, which is now living. A light infufion of the bark, after this, was ordered for her, with a gentle aperient occafionally; and this was all that was wanting.

"Every body converfant with the animal economy, knows how eafily a habit is formed, and how much the fyftem is influenced by it. The reader, however, fhall determine for himfelf. The fact, as I have related it, is not lefs a fact, although I may have failed in the explanation of it."

2. *Heart-burn* and *diarrhœa*, common fymptoms of breeding, or of pregnancy, muft be treated pretty much as at other times. Both complaints chiefly depend on the ftate of the ftomach. Dr. John Sims has been in the habit of employing *pure ammonia* in fuch cafes, and with "extraordinary fuccefs." He fays, "In all the complaints of pregnant women, arifing from too prevailing an acidity, fo general with them, fuch as heart-burn, vomiting, cough upon taking food, and that feverifh, reftlefs ftate fo common in the latter period of pregnancy. For all thefe complaints, I direct two or three fpoonfuls of the following mixture

to be taken either occafionally, or when the fymptoms are more continual, immediately after every meal:

(No. 1.) ℞ Magnefiæ uftæ, drachm. j.
Aqua puræ, unc. vfs
Spt. Cinnamomi, drachm. iij.
Aquæ Ammoniæ puræ, drachm. j.*. Mifce.

"Magnefia has long been a celebrated remedy for thefe complaints, but the moft efficacious ingredient in the prefcription is the pure ammonia, as the effect will be nearly the fame without the magnefia, but this without the ammonia is far inferior indeed.

"I was firft led by accident to the difcovery of the extraordinary power of the pure ammonia in correcting acidity in the ftomach, over other alkaline fubftances. My wife being feized in the night with a fevere heart-burn, I arofe with a view of getting her fome magnefia; but not being able to find any, and being defirous of procuring her fome immediate relief, I expected to obtain this by any alkaline fubftance, and not meeting with any but the water of pure ammonia, which I happened to have by me, I adminiftered twenty drops in a glafs of water; the relief was inftant, and more complete than fhe had ever experienced from taking magnefia. This induced me on another occafion to give her a teafpoonful of hartfhorn drops in water, expecting the fame effect; but, to my furprife, no fenfible relief was obtained, even when repeated: recourfe was had again to the pure ammonia, and with immediate fuccefs, as was afterwards found invariably to follow its ufe. This induced me to try it in others. At firft I was apprehenfive that the frequent ufe of cauftic volatile alkali might be attended with fome inconvenience, and I was unwilling to believe that it could poffefs any power beyond any other alkaline fubftances, which might neutralize the acid in the ftomach; but experience convinced me both of its fuperior efficacy and its innocence, never having known any difagreeable confequences follow its ufe.

"It fhould feem probable from the effect of this remedy, that the cardialgia, and the other fymptoms enumerated, may arife from an acid gas in the ftomach, more than from its liquid contents. This gas is probably neutralized by the alkaline gas into which the water of pure ammonia will be converted by the heat of the body. That the carbonates of ammonia will not fucceed, may arife from the fuperior attraction of the carbonic acid for the alkali, to that of the morbid gas. But whether the theory be juft or not, the effect is certain.

"Before I conclude, it will be proper to remark, for the fake

* This proportion fuppofes that the aq. ammon. puræ as prepared at the Apothecaries' Hall is ufed; that made by fome of the chemifts is much ftronger.

of the younger practitioner, that the vomiting which occurs in early pregnancy, very rarely arises from, or is connected with, acidity, and that this remedy of course is not appropriate. When vomiting in early pregnancy is moderate, and confined to the fore-part of the day, it appears to be useful, and nothing should be done to prevent it; but it sometimes happens that the vomiting is incessant for many days together, accompanied with great prostration of strength, and constant thirst, and at the same time an utter inability of retaining any thing on the stomach. In this state the most effectual remedy I know of is, the application of leeches to the pit of the stomach, and a constant attention to suffer nothing to be swallowed that can irritate. I have found it of the greatest service to allow the patient nothing but asses' milk, and that by single spoonsful only. The use of leeches applied to the pit of the stomach in relieving vomiting is by no means confined to the state of pregnancy, but when this symptom occurs in fevers, or follows the indigestion of any acrid substance, they are equally useful, as I have repeatedly experienced."

3. *Tumefaction*, *tension*, and *pains* in the *mammæ.*—If tight lacing here be only avoided, and the breasts have room to enlarge and swell, no inconvenience ever follows: these effects arise from a natural cause, and seldom require medical treatment. If very troublesome and uneasy, bathing with oil, or anointing with pomatum, and covering with soft flannel or fur, will in most cases prove the cure.

4. The *menstrual evacuation*—is in some women regular for the first, second, or third period after conception. This seldom happens but in women of sanguinary plethoric habits, such as have been accustomed to large copious evacuations at other times, when the discharge is to be considered as beneficial.

5. *Deliquia*, *nervous*, or *hysteric fits*—When these are occasioned by falls, frights, and passions of the mind, they frequently end in the loss of the child: but when they happen about the term of quickening, they seem to arise from the escape of the uterus from its confinement within the capacity of the pelvis; in which case they are commonly slight, of short duration, and never threaten any dangerous consequence.

II. The second class of complaints, viz. those that are incident to the advanced stages of the utero-gestation, and that depend on the change of situation of the gravid uterus, its enlargement and pressure on the neighbouring parts are more painful in their symptoms, and more dangerous in their consequences, than those enumerated in the preceding class. The premature exclusion of the fœtus is generally the worst inconvenience resulting from the one; the death of the mother, along with the loss of the child, is too frequently an attendant of the other.

1. *Difficulty* or *suppression of urine*—is sometimes occasioned by

the preffure of the uterus on the neck of the bladder, before the fundus uteri efcapes from its confinement within the brim of the pelvis. This complaint, if early attended to, will feldom prove troublefome or hazardous; but cannot be entirely removed till the uterus rifes above the brim of the pelvis, and by its enlargement becomes fupported by refting on the expanded bones of the offa ilia. But if neglected in the beginning,

2. *A retroverfion of the uterus*—is generally the confequence; a cafe that demands particular attention. Here the fundus uteri, inftead of being loofe, falls back in a reclined ftate within the hollow of the os facrum: thus a tumor is formed in the vulva, whereof the os tincæ makes the fuperior part; the body of the uterus, by this means, becomes ftrongly wedged between the rectum and bladder; and, from the enlargement of the uterus itfelf, and accumulating load of fæces and urine, the reduction will prove in many inftances utterly impracticable. A total fuppreffion of urine, or a rupture of the coats of the bladder, fever, inflammation, or gangrene of the uterus, often enfue; and thefe are fucceeded by delirium, convulfions, and death.

The indications of cure in this dangerous difeafe, are fufficiently obvious: for, in the firft place, every obftacle that prevents the reduction fhould be removed: thus the contents of the rectum and bladder muft, if poffible, be evacuated; emollient fomentations and cataplafms muft be applied, if indicated by inflammation or tumefaction of the parts. Secondly, the reduction of the prolapfed uterus muft be attempted, by placing the patient upon her knees, with her head low and properly fupported. While this is attempted within the vagina, a finger or two fhould alfo be paffed within the rectum, by which the operation in fome cafes may be facilitated: but, at other times, no power whatever will be fufficient for this purpofe. Laftly, if the reduction be accomplifhed, the fever, inflammatory fymptoms, and other confequences of the difeafe, muft be fubdued, and a recurrence prevented by an open belly, reft, and a recumbent pofture, and promoting a free difcharge of urine; means that ought to be perfifted in till the uterus rifes within the abdomen, when the patient will be fecured from future danger.

3. *Coftivenefs in pregnancy*—is inconvenient. It may proceed from the fame caufe with the preceding complaint; it may depend on the ftomach; the febrile heat, that in many women prevails, will alfo prove an occafional caufe. It may be obviated or prevented by a proper regulation of the regimen, and by fuch gentle laxative medicines as are beft fuited to the ftate of the woman; the chief of which are ripe fruit, magnefia, lenitive electuary, cream of tartar, fulphureous and aloëtic medicines, oleum ricini, emollient clyfters.

4. *The piles*—frequently arife in confequence of coftivenefs, or

from preſſure of the gravid uterus on the hæmorrhoidal veins. Theſe are alſo to be removed or palliated by the ſame means employed on other occaſions; regard being had to this diſtinction, which may be applied univerſally to the gravid ſtate, that all violent remedies are to be avoided: a light diet ſhould be enjoined; the belly ſhould be kept moderately open; and topical liniments or cataplaſms ſhould be applied, ſuch as Balſ. ſulphur. Tinct. benzoes comp. Liniment. ex ol. palmæ, cum tinct. opii, poultices of bread and milk with opium, &c. according to the various circumſtances of the caſe. See this ſubject under SURGERY.

5. *Œdematous ſwellings of the legs* and *labia*—are occaſioned by the languid ſtate of the circulation, by the interruption of the refluent blood from the preſſure of the diſtended uterus on the vena cava, &c. Theſe, though very troubleſome and inconvenient, are ſeldom, however, of dangerous conſequence, except where the habit is otherwiſe diſeaſed; and ſeldom require puncture, as the ſwelling generally ſubſides very quickly after delivery. They can only, therefore, at this time admit of palliation; for which purpoſe, along with a proper diet and moderate exerciſe, a frequent recumbent poſture, open belly, and dry frictions applied to the legs evening and morning, will prove the moſt effectual means.

6. *Varicous ſwellings in the legs and thighs*—from the interruption of the venal blood in theſe parts, occaſioned by the preſſure of the gravid uterus, are to be treated in the ſame manner with the preceding complaint; or they may be aſſiſted by moderate bandages of looſe callico or flannel.

7. *Pains in the back, loins, cholic-pains, cramp*—occaſioned by the ſtretching of the uterus and appendages, and from the preſſure of the uterus on the neighbouring parts, ſymptoms that are moſt troubleſome in a firſt pregnancy, are to be palliated by venæſection, an open belly, and light ſpare diet. If the patient be of a full habit, and prediſpoſed to inflammatory complaints, where the preſſure is very great in the advanced months, or in twins, &c. if proper remedies are neglected, inflammation of the uterus and adjacent viſcera, or dreadful epileptic fits, may quickly enſue; the event whereof is generally fatal. Crampiſh ſpaſms in the belly and legs require the ſame palliative treatment; to which may be added friction, and the application of æther, ol. volatil. balſ. anodyn. or the like, to the parts affected.

8. *Cough, dyſpnœa, vomitings, difficulty or incontinence of urine*—occaſioned by the preſſure of the bulky uterus on the ſtomach, liver, diaphragm, &c.—Complaints that can only be alleviated by frequent ſmall bleedings, a light ſpare diet, and open belly. The patient ſhould be placed in an eaſy poſture, ſomething between ſitting and lying; and when the uterus riſes high, a mode-

rate degree of preſſure from the ſuperior part downwards, may in ſome caſes prove uſeful. But this muſt be uſed with great caution; for dreadful are the effects of violent preſſure, or tight lacing, during pregnancy. It frequently kills both mother and child, and ought to be guarded from the earlieſt months.

9. *Inflammation of the bladder.*—This viſcus, in common with every other, is liable to morbid affections, which may or may not prove ſerious in the unimpregnated ſtate of the womb; but where theſe exiſt already, the diſeaſe is naturally liable to aggravation from pregnancy, and even to be hurried on to a fatal termination, as appears to have been the caſe in various inſtances.

The following caſe of a woman, aged about 32 years, who was nearly five months gone with child, and died of a mortification in the bladder, appears in the Medical and Phyſical Journal.

" Late at night on the 10th of February (ſays Mr. Dray, of Hythe) Mrs. Hannah Lowe was taken with pains ſo like to thoſe of labour, that ſhe expected an abortion would take place immediately. I was called upon to attend her early the next morning, when ſhe informed me, that ſhe ſuppoſed herſelf to be about four months gone with child, and that her pains had been regular and bearing. Finding no diſcharge, ab utero, and that ſhe had paſſed but little urine, an enema was ordered, and, ſoon afterwards, an anodyne. Some hours afterwards, as the fæcal diſcharge had been trifling from the enema, a gentle laxative was given, by which her inteſtines were well emptied. It was plainly to be perceived, on an examination per vaginam, that there was a great bearing down, which led me to ſuppoſe, with the woman herſelf, that an abortion would not be long before it took place. She had external hæmorrhoids to ſo great a ſize, that I judged it neceſſary to puncture them. In a day or two after, on being informed that ſhe now made ſo little water that it amounted to nearly a ſuppreſſion of it, I paſſed the catheter, and drew off more than three pints of high-coloured urine, which greatly relieved her for a time; and the next day I drew off nearly the ſame quantity, but much paler. Obſerving that her ſeeming labour-pains recurred in proportion as the bladder became diſtended, I conſidered it proper to draw off her water, morning and evening, daily. In this manner ſhe went on, without any material alteration, always complaining of a pain and tenderneſs of the abdomen, till about the tenth day, when her urine became ſo very offenſive that I could hardly bear its ſtench. The uterus was forced down much lower into the pelvis, and the os internum, with the cervix uteri, clearly to be perceived in a ſtraight direction towards the os externum. It was very plain to me now, from the fœtor of the urine, and the turbidneſs of it (ſeveral times before), that the bladder was in a very diſeaſed ſtate; and I began to doubt whether there was any defect in the uterus. To be brief, the woman

kept on in this way (except that the abdomen got more and more enlarged, in an even and regular manner, up to the ſcrobiculus cordis, and the pain was much greater) till about the 2d of March, when ſhe was ſeized with a hiccough that increaſed upon her till ſhe died, which was on the 4th of March, in the evening, being the twenty-third day of the diſeaſe. The os tincæ, for three or four days before ſhe expired, was quite at the verge of the os externum, but no diſcharge whatever was perceived to come from the uterus. There was no heat of the ſkin through the whole of this poor woman's caſe, no great drought, or acceleration of her pulſe, till a day or two before the cloſe of it. The alvine diſcharge was in general regular, excepting a ſmall time before ſhe died, when ſhe had a frequent diſcharge by ſtool, and likewiſe a vomiting of porracious bile. The urine diſcharged by the catheter * was very high coloured, and much leſs in quantity for the laſt two or three days, and always followed with a bloody, foul mucus. Her tongue was clean the whole time of her diſeaſe. She got up and dreſſed herſelf every day. Her ſpirits were, commonly, good; and her ſenſes perfect to the laſt.

" On opening the body, the omentum preſented itſelf in a morbid ſtate, adhering to the peritonæum, very generally, through its whole extent, and likewiſe to the inteſtines; and alſo the bladder adhered to the uterus. In ſhort, the abdominal viſcera appeared like one maſs, the adheſions being ſo general. The bladder was much thickened and enlarged, and contained nearly two quarts of urine, in which was a great quantity of foul mucus, and the whole of it was in a complete ſtate of gangrene. The uterus ſeemed not to be in the leaſt diſeaſed, and, from appearance, the fœtus † could not have been long dead. The whole of the gravid uterus was forced very low down into the pelvis, which, as I have before mentioned, might be plainly perceived whilſt the woman was alive, by examining per vaginam. The kidneys and liver were in a ſound ſtate. A great quantity of fluid was effuſed into the cavity of the abdomen.

" The principal remarks to be made on this caſe, before and after the death of the patient, ſeem to me to be theſe: Firſt, the ſeeming labour-pains, and bearing down of the uterus; ſecondly, the partial diſcharge at firſt, and, afterwards, total ſuppreſſion of urine; thirdly, the gradual enlargement of the abdomen; fourthly, the abſence of fever, nearly through the whole of the diſeaſe;

* It is to be remarked, that the patient never made a drop of water after the firſt two or three days of her illneſs; and, for many days previous to her diſſolution, the point of the catheter was tarniſhed every time of uſing it.

† The fœtus, by its ſize, ſeemed to agree with the woman's ſtatement of the time of her pregnancy.

fifthly, the great thickneſs of the bladder, and its extremely gangrenous ſtate.

"As this poor woman had been in a very healthy ſtate previous to this attack (excepting a complaint ſhe had for ſome time made to her friends, of an obtuſe pain at the region of the bladder, running through to the back, which ſhe did not think of conſequence enough to conſult me upon), I was much at a loſs to account for the cauſe of the diſeaſe; which diſeaſe, with the principal ſymptoms in it, joined to what appeared on diſſection, ſeems to me, now, to have clearly begun in the bladder. This has been, to my mind, ſatisfactorily explained ſince, by the friends of the patient. They informed me, that frequently, in the courſe of the day, ſhe was in the habit of reaching over a cheſt, and taking a variety of things ſuch as coals, &c. from behind it, placed there for convenience, as the family had only one room (a chamber) to live in. The preſſure on the bladder, ſo very often, by the edge of the cheſt, when in a diſtended ſtate, muſt injure it, I make no doubt, to a great degree; and by the preſſure of that viſcus and the inteſtines, at ſuch a time on the uterus, this latter was forced down lower into the pelvis than natural at this period of its gravidity. The uterus being ſo low down in the pelvis, at the latter end of the diſeaſe, may be explained by the great ſize and diſtenſion of the bladder, as it was not poſſible to draw off the urine entirely, for a day or two previous to her diſſolution. The pains, which alternated like thoſe of labour, were clearly from the diſeaſed ſtate and diſtenſion of the bladder; and the total ſuppreſſion of urine muſt ariſe chiefly, if not entirely, from the morbid ſtate of it. The gradual enlargement, and conſtant pain in the abdomen, proceeded from the ſlow but ſteady progreſs towards the gangrene, which had extended itſelf along the peritonæum, &c. nearly as high up as the ſcrobiculus cordis. But the wonder now comes, why there was not the leaſt ſymptom of fever, excepting near the cloſe of the diſeaſe, when there was ſuch a morbid ſtate of the bladder, &c. and ſuch great adheſions? I muſt confeſs that I am at a loſs to account for a thing ſo extraordinary, but this was the fact; and it was equally a fact, that the woman's ſpirits and ſtrength kept up in a moſt aſtoniſhing manner, notwithſtanding ſhe ſlept but little during the whole time of her illneſs.

"The indications in this caſe were not ſuch as to point out the uſe of bleeding, bliſtering and other antiphlogiſtic means, the only ones which now ſuggeſt themſelves as having the leaſt chance of relieving the patient. The whole of the treatment that was indicated, ſeemed to me to conſiſt in the evacuation of the urine, watching and keeping up the alvine diſcharge, and alleviating the ſymptoms occaſionally."

10. *Epileptic fits*—are a very dreadful and alarming appearance.

They generally depend on the ſame cauſe with the above complaints: they may alſo ariſe from irritation, excited by the motion and ſtirring of the fœtus, and from various other cauſes. Such as had convulſions when young, are moſt liable to them during pregnancy: they happen moſt frequently in firſt pregnancies, or where the fœtus is very large, or in twins, triplets, &c. In ſuch caſes, the diſtenſion of the uterine fibres is ſo great, that actual laceration is ſometimes the conſequence.

At whatever period of pregnancy they occur, the utmoſt danger may be dreaded. This, however, will be in proportion to the ſeverity, duration, and recurrence of the paroxyſm, to the term of gravidation, to the conſtitution of the patient, and her condition during the remiſſion. The danger is greater towards the latter end of pregnancy than in the earlier months or in time of labour.

Such as ariſe from inanition, from exceſſive and profuſe hæmorrhages, from violent blows, falls, &c. or from a ruptured uterus, are for the moſt part fatal.

Hyſteric or nervous ſpaſms muſt be carefully diſtinguiſhed from true epileptic fits. The former are milder than the latter; they are not attended with foamings; they do not affect the poſture; the pulſe is ſmaller, feebler, and more frequent; the woman is pretty hearty after they are over; they are followed with no bad conſequences, and yield to the common treatment. Women of ſtrong, robuſt, vigorous conſtitutions, are more generally the ſubjects of the one; the delicate, the nervous, and the irritable, of the other.

Epileptic fits generally come on very rapidly; if any previous ſymptoms occur, the fit is commonly announced by an intenſe pain in the ſcrobiculus cordis, or violent head-ach.

In the pregnant ſtate, theſe fits are for the moſt part ſymptomatic, and will therefore only admit of a palliative cure. They may be diſtinguiſhed into three claſſes: thoſe of the early months, thoſe of the latter, and thoſe that come on with labour-pains.

With regard to the cure, the term of pregnancy, as well as the conſtitution of the patient, and particular cauſe of the diſeaſe, muſt carefully be conſidered.

Convulſions at an early period of pregnancy chiefly happen to young women of a plethoric ſanguine habit; and can therefore only be removed or palliated by a free and bold uſe of the lancet, by an open belly, cool regimen, and ſpare diet. After plentiful evacuations, if the ſtomach be loaded with acrid ſaburra or putrid bile, a gentle puke may be of uſe: but ſuch remedies, on thoſe occaſions, muſt be employed with great caution. Inſtead of a plethoric, if the patient is of a nervous habit, a very neceſſary and important diſtinction, the intentions of cure will eſſentially

vary. For here opiates in large doſes and frequently repeated, emollient clyſters, ſtupes applied to the legs, the ſemicupium, and every other means to ſoothe the nerves and remove ſpaſmodic ſtricture, will prove the moſt effectual remedies. If inſenſible or comatous, opium, muſk, and other antiſpaſmodics, ſhould be exhibited by way of clyſter, and the patient ought to be rouſed by epiſpaſtic and ſtimulating cataplaſms applied to the legs and hams. Convulſions ſucceeding profuſe evacuations are generally mortal. The vis vitæ, in ſuch circumſtances, muſt be ſupported by repleniſhing the veſſels with the utmoſt ſpeed: this is to be done by pouring in nouriſhing fluids as faſt as poſſible by the mouth and by clyſter; warm applications ſhould alſo be made to the ſtomach and feet, and nervous cordials given internally along with opium.

The treatment of epileptic fits depending on other cauſes than thoſe now mentioned, muſt be regulated by a proper attention to the particular ſymptoms with which they are attended.

In the advanced months, ſuch complaints are more to be dreaded than in early geſtation, as they generally proceed from the irritation occaſioned by the diſtenſion of the uterine fibres, or by the preſſure of the uterus on the contiguous viſcera: hence the natural functions of theſe parts will be interrupted, the circulation of their fluids will be impeded, and the blood, being thus prevented from deſcending to the inferior parts, will be derived in greater proportion to the brain, and overcharge that organ.

The cure muſt, in this caſe, chiefly reſt on copious and repeated bleedings, an open belly, and ſpare diet.

Laſtly, when fits come on with labour-pains, a ſpeedy delivery, if it can be done with ſafety, either by turning the child, or by extracting with the forceps when the head is within reach, will prove the moſt effectual cure.

When the bladder is diſtended, the contents muſt be evacuated: if a ſtone ſticks in the urethra, it muſt be puſhed back or extracted. If the fits are the effect of a ruptured uterus, immediate death is generally the conſequence.

With regard to the treatment of ſuch complaints, no other change is generally requiſite, than what ariſes from the ſymptoms peculiar to this ſituation. In general, till after delivery, they will only admit of palliation.

Hydatids diſcharged from the uterus.—One of Dr. Smellie's pupils attended a poor woman, who, in the fourth month of her pregnancy, was taken with a violent flooding, which was reſtrained by opiates; but, in three days, returned with greater violence, accompanied with ſtrong pains and frequent ſtraining, like a teneſmus. At length ſhe diſcharged a pot full of coagulated blood and hydatids, adhering to a membranous ſubſtance, or to one another like a bunch of grapes of different ſizes, from

the bignefs of a nutmeg to the fmallnefs of hempfeed. The patient was reduced to fuch a degree, that it was thought fhe could not poffibly live; neverthelefs, fhe gradually recovered, contrary to expectation.

Another practitioner was called to a woman about the age of 27, who thought herfelf feven months gone with child. When he entered the room, fhe ftood leaning on the back of a chair, with an earthen pot betwixt her legs: fhe had voided near a pint and a half of blood into this receiver before he came, and at times evacuated the fame quantity for near three months. Her flooding was then much abated; but fhe was very weak and low, though almoft entirely free from pain. On examining the matrix, the os tincæ was found open to fcarce the breadth of half-a-crown, but nothing like the appearance of a child. Though her flooding was now but fmall, in confideration of her having enjoyed no reft for three nights before, fhe was put to bed, and took a compofing draught, which made her fleep about two hours; but fhe waked with feemingly ftrong pains. "I examined her," fays the relater of the cafe, "again, and, introducing my fore and middle fingers into the vagina, felt fomething which I miftook for clotted blood. It filled both my hands when I brought it away, and appeared to be a large bundle of hydatids connected one with another by an infinite number of fmall, flender filaments. Thefe bladders contained a clear lymph, and were of different fizes; fome as large as my thumb, and others as fmall as a pin's head; and her pains continuing, fhe evacuated as many as filled a two-quart bafon: thus delivered, fhe was free from her pains, her flooding ceafed, and the womb contracted to the fize of my fift. Neverthelefs, fhe was ftill ftrongly poffeffed with the notion that there was a child remaining, and earneftly begged that I would bring it into the world. I affured her, that fhe was already delivered of what fhe had miftaken for a child, and having prefcribed what was neceffary, left her very well fatisfied and compofed. Next day I found her eafy; fhe continued to do very well, and at the writing of this cafe was in the fifth or fixth month of pregnancy. She had been delivered of two children, before fhe was troubled with the hydatids."

Mr. Lamotte, in his 16th Obfervation, gives an account of a woman that imagined herfelf gone with child above five months, who was delivered of what was fuppofed a *mole*, or fomething of that nature, as big as two fifts, compofed of an infinite number of hydatids or veficles, tied to one another by membranes, and which held together like the fpawn of frogs; after being exceffively weakened with a continual lofs of blood for eighteen days, which was flight at firft, but became very violent before delivery, and ftopped immediately after.

In the Medical and Phyfical Journal we find the following cafe, by Mr. Mills, of Croom's-hill:

"Some time in July, 1797," fays he, "I was cafually confulted by a lady, who imagined herfelf two or three months gone with child; her complaints were pains in the back, attended at times with the fenfe of bearing down, and appearances of catamenia; hence fhe imagined fhe was about miscarrying. Knowing her averfion to any medical regimen, I only advifed her to keep as much as poffible in an horizontal pofition, and to pay due attention to the ftate of her bowels. Several weeks after I had given this advice, I met her maid, who informed me, that her miftrefs continued much as when I faw her. From this I hinted as my opinion, that fhe was not pregnant.

"When my patient had fuppofed herfelf to be five or fix months gone, I was defired (unknown to her) to vifit her; fhe was then on the bed, and told me fhe had throughout the day regular pains, with fome difcharge; but as fhe thought the pains were not fufficient to require my affiftance, fhe had neither fent to me nor the nurfe, being ftrongly averfe to having either with her till abfolutely neceffary. I defired the family would immediately fend for the nurfe, to whom I gave directions that were proper for obtaining a due information refpecting the nature and quantity of the difcharge. In a little time, I was convinced that the flooding was confiderable, particularly at the time of pain. I took the earlieft opportunity to examine my patient by the touch, and found the vagina filled with what I imagined to be coagulated blood. The os uteri was low down, lax, and dilated about the fize of half-a-crown. After this examination the hæmorrhage nearly ceafed, but foon returning to an alarming degree, I determined to feek for the fœtus and deliver. On introducing my hand for that purpofe, the uterus forcibly contracted, and filled my hand with what I thought clots of blood: at that inftant my patient was feized (as fhe called it) with a moft violent cramp in her belly, and was attacked with a univerfal rigor. Under thefe circumftances, and fenfible that the flooding had ceafed, I defifted from purfuing my intention of delivering, and adminiftered wine and fuch other remedies as the occafion feemed immediately to require. At this time the rigor and coldnefs were like the paroxyfm of a fevere ague; but the pulfe, though quick, was not alarmingly low. When my patient had regained her natural warmth, I was folicitous to afcertain the ftate of the uterine difcharge; I found hardly any, I therefore employed myfelf in clearing the bed from the collected coagula; when, to my furprife, I nearly filled a bafon with innumerable hydatids, of various fizes, from a large Portugal grape to a fmall pin's head. The whole, fo cleared, meafured three pints and four ounces. The lady recovered her accuftomed fhare of health, as patients ufually

do after violent floodings, and I believe ſhe has not proved pregnant ſince."

Theſe latter caſes, however, are rather to be claſſed under the head of Spurious Pregnancy; the *Diſeaſes of Pregnancy* being, ſtrictly, the effects of actual conception.

CHAP. X. FLOODINGS.

THESE, though confined to no particular term, may happen at every period of gravidation. The one is a frequent conſequence of the other; the event of both is often hazardous, as the earlier miſcarriages are generally preceded by an effuſion of blood from the uterus, which, in the advanced ſtages of pregnancy, beſides the loſs of the child, always endangers the life of the mother.

The *menorrhagia gravidarum*—may be defined, an effuſion of blood from the uterus, confined to no regular or ſtated periods, in quantity and duration various, and liable to recur on the ſlighteſt occaſions.

The immediate cauſe is, a ſeparation of ſome portion of the placenta or chorion from the internal ſurface of the uterus. Whatever occaſions this ſeparation, may be conſidered as the remote cauſe, which, though various, may be reduced to

I. Thoſe that affect the general ſyſtem: as,

1. External accidents changing the ſtate of the circulation.
2. Changes in the circulation from internal cauſes.
3. Debility.
4. Plethora.

II. Thoſe that affect the uterus and placenta: as,

1. Direct affections.
2. Stimuli communicated from an affection of other parts.

With regard to the cure—Though a flooding in ſome conſtitutions may happen even in early geſtation, and may remit and recur from time to time, and the woman go on to the end of her reckoning; and though it ſeldom or never happens that this complaint proves mortal to the mother in the firſt five weeks of pregnancy; yet every appearance of this kind, even the ſlighteſt, is to be dreaded: as in the early months it will often throw off the fœtus, and, in the latter, always threatens the utmoſt danger both to mother and child. Floodings of gravid women we cannot propoſe radically to cure; they will only admit of palliation. With this view, the indications are,

I. To leſſen the force and velocity of the blood in general.

II. To promote the conſtriction of the patulous mouths of the bleeding veſſels, or the formation of coagula in their orifices.

1. To anſwer the firſt indication, reſt and a recumbent poſture,

cool air, tranquillity of mind, a light diet, venæfection, and opiates, are the chief means.

2. To reftrain the violence of the hæmorrhagy, internal aftringent medicines are recommended; but this is to be accomplifhed chiefly by means of cold ftyptic applications to the parts and their neighbourhood. But as thefe floodings often arife from fo various and oppofite caufes, it is difficult to lay down particular indications, or to point out a method of cure fuited to every cafe that may occur. The intention of cure can only be regulated by a careful and judicious confideration of the caufe, and of thofe particular circumftances with which the cafe may be attended. In early pregnancy, it may be reftrained by keeping the patient quiet and cool, by giving internally cooling liquids and opiates; but, in the advanced ftages, the deluge is fometimes fo profufe as to kill very fuddenly. Under fuch circumftances, when the woman is near her time, emptying the uterus by delivery, if practicable, is the only fafe expedient both for preferving the life of the mother and of the child.

If the hæmorrhagy can be reftrained, a recurrence muft be guarded againft, by avoiding or counteracting the occafional or remote caufes.

CHAP. XI. ABORTION, OR MISCARRIAGE.

SECT. I. *Of* SPONTANEOUS ABORTION.

ABORTION may be defined, the premature expulfion of the embryo or fœtus. Some, however, make the following diftinction: When a woman mifcarries in early geftation, this they confider as an abortion; but if in the latter months, that they term a *premature birth.* The fymptoms that threaten abortion are:

Flooding.

Pain in the back and belly.

Bearing-down pains with regular intermiffions.

The evacuation of the waters.

The death of the child, which difcovers itfelf by the following fymptoms; though in general thefe are fo doubtful and fallacious, that none of them afford an infallible fign:

1. The fubfiding of the abdominal tumor.
2. Ceffation of motion in the fœtus.
3. The fenfation of a heavy weight falling from fide to fide, as the woman turns herfelf in bed.
4. Sicknefs, faintings, rigors, cold fweats.
5. The breafts turning flaccid.
6. Coldnefs of the abdomen, and putrid difcharge from the vagina.

Abortions are ſeldom dangerous in the firſt five months; but a frequent habit of miſcarriage debilitates the ſyſtem, ſhatters the conſtitution, and lays the foundation of chronic diſeaſes of the moſt obſtinate and dangerous nature.

In the advanced months, the prognoſis will be more or leſs favourable according to the patient's former ſtate of health, the occaſional cauſe, and ſymptoms with which it is attended. The proximate cauſe of abortion is the ſame with that of true labour, viz. a contracting effort of the uterus and abdominal muſcles, aſſiſted by the other expulſive powers. The remote cauſes cannot be explained with preciſion; as many circumſtances, with regard to the nature of impregnation, and connection of the fœtus with the placenta and uterus, are ſubjects ſtill involved in darkneſs. They may in general, however, be reduced,

I. To whatever interrupts the regular circulation between the uterus and placenta.

II. To every cauſe that excites the ſpaſmodic contraction of the uterus, or other aſſiſting powers.

III. To whatever occaſions the extinction of life in the fœtus.

Amongſt the firſt are:

1. Diſeaſes of the uterus.

2. Imperviouſneſs or ſpaſmodic conſtriction of the extremities of the uterine blood-veſſels.

3. Partial or total ſeparation of the placenta or chorion from the uterus.

4. Determination to other parts.

To the ſecond general head belong all cauſes that produce a ſtrong contraction of the elaſtic fibres of the uterus, or of the parts that can preſs upon it, or that occaſion a rupture of the membranes; ſuch as,

1. Violent agitation of mind or body.

2. A diſeaſe of the membranes.

3. Too large a quantity of liquor amnii.

4. The croſs poſition of the fœtus.

5. Its motion and kicking.

The laſt head includes the numerous cauſes of the death of the child, which, beſides thoſe referred to in the preceding claſſes, may be occaſioned by,

1. Diſeaſes peculiar to itſelf.

2. Diſeaſes communicated by the parents.

3. External accidents happening to the mother: or,

4. Accidents incident to the fœtus in utero.

5. Diſeaſes of the placenta or funis.

6. Knots and circumvolutions of the chord.

7. Too weak an adheſion of placenta or chorion to the uterus; and,

8. Every force that tends to weaken or deſtroy this attachment.

In consequence of the great abridgment of the human race by abortion, and the ill health it induces to those unfortunate females who become subject to it, the late Dr. Hunter bestowed infinite pains to investigate its cause, and to check its progress. He dissected three abortions, which happened at the most usual time women are subject to this misfortune, namely, towards the end of the third month; whence it appeared, that there is an extinction of life in the fœtus for some time before any symptoms of abortion occur. For instance, if the miscarriage happens about the end of the third month, the age of the fœtus is generally no more than eight or nine weeks; or, if it perishes in the fifth, sixth, or seventh month, it will still be retained in the uterus, and the expulsion will rarely happen until near the completion of its full time.

Previous to opening these abortions, Dr. Hunter had made several useful discoveries relative to the human pregnant uterus. His brother, Mr. John Hunter, had likewise, by a number of surgical operations, manifested, that "the blood is the life of the body." Hence Dr. Hunter concluded, that a careful investigation of the minuter vessels of the uterine system, with their ramifications, would be the likeliest means of obtaining satisfactory information on this delicate subject. This also led him to the discovery of the decidua, which is a membrane of a very peculiar nature, the knowledge of which throws great light upon the contents of the pregnant womb, and upon the connection between the mother and child. It appears to be an efflorescence of the internal coat of the uterus; and is therefore shed as often as the woman bears a child, or suffers a miscarriage. It consists of two parts, called decidua vera, and decidua reflexa. In separating it from the chorion, and from the muscular fibres of the uterus, an infinite number of small veins and arteries are discovered full of blood, which ramify from its outer surface inwards through its whole substance, blending itself inseparably with the umbilical portion of the placenta. Its principal arteries run in winding convolutions, like the coiling of a snake, forming an appearance much resembling that of lace; and considering the number and size of the vessels, which are necessarily broken upon the expulsion of the fœtus, we cannot longer wonder at those frequent fatal bleedings which accompany miscarriages in an advanced state of pregnancy. The subjects of these curious and masterly dissections are represented in Plate V. of which the following is an explanation:

Fig. 1. An abortion of about nine weeks old, seen on that side which is membranous. The decidua is torn, and turned somewhat aside, to shew the smooth and opaque decidua reflexa. A, the rough external surface of the decidua, which exfoliated from the womb. B, the outside of a small portion of the pla-

centa, the rest of which was situated on the back part of this ject. CC, the internal cribiform surface of the decidua; which, in the first months of pregnancy, does not adhere to the membranes which it encloses. DD, the lacerated edge of the decidua, which had been continued into the edge EE of the same membrane. F, the decidua reflexa, spread over the outside of the chorion. GG, the angle of reflection at the edge of the placenta, where the inner layer of the decidua is turned over the chorion; much in the same manner as the inner lamella of the pericardium is reflected, to cover the outer surface of the heart. H, the termination of the decidua at the cervix uteri.

Fig. 2, shews a vertical section of the same subject. AA, the section of the placenta, which, we must suppose, had adhered to the upper and back part of the womb. B, the section of the anterior portion of the decidua. C, the section of the posterior portion of the decidua. D, the termination of the decidua at the cervix uteri. E, the cavity of the amnion, in which the embryo hangs by a slender navel-string, from the inside of the placenta. F, the section of the three membranes, which are not only contiguous, but adhere to one another, viz. the amnion, the chorion, and the decidua reflexa. GG, the angle at the edge of the placenta, where the inner layer of the decidua is reflected over the outside of the chorion. H; here those three membranes are a little separated, to shew their course at the placenta.

Fig. 3, represents an abortion of about eight weeks old. A small strap of the decidua is cut out, and turned up, to shew the cavity between it and the other membranes. A, the cut slip of the decidua. B, the part of the conception where there is no decidua, viz. opposite to the passage through the cervix uteri. CC, the external surface of the decidua. D, the decidua reflexa covering the chorion and amnion, which fill up the cavity of the decidua. E, the outside of the upper part of the placenta.

Fig. 4, represents the same subject, when the decidua had been opened by a crucial incision, and the four angles had been turned off, and then a round piece of the decidua reflexa dissected off, and turned to one side, to shew the loose vessels on the outside of the chorion. AA, the inside of the four angles or flaps into which the decidua was reduced by crucial incision. BB, the decidua reflexa covering the other membranes. C, the angle at the edge of the placenta where the interior lamella of the decidua is continued over the outside of the chorion, forming the decidua reflexa. D, a round portion of the decidua reflexa dissected from the outside of the chorion and turning aside. E, the chorion, with its shaggy vessels, laid bare. These vessels adhered firmly to the decidua reflexa, and parts of them were cut off with that membrane.

Fig. 5, shews an abortion of the same age, consisting of the

Fig. 1.



Fig. 6.

Fig.



chorion only, with its veſſels and contents; that is, without the decidua, or uterine part of the ſecundines. A, the larger and more crowded branches of the ſhaggy veſſels which ſhoot from the external ſurface of one part of the chorion, to mix with the decidua, or uterine part, to form the placenta. B, that portion of the chorion which afterwards becomes the uniform tranſparent membrane. It is covered with fewer and more delicate floating veſſels, which loſe themſelves in the decidua reflexa. The embryo is ſeen through it. C, the veſicula umbilicalis on the outſide of the amnion, ſeen through the chorion; with a whitiſh thread (the remains of an artery and vein), leading from it towards the navel of the embryo.

Fig. 6, repreſents the ſame abortion opened. The membranes, which were at the fore-part, being cut from the placenta, and turned up, the embryo is diſtinctly ſeen. A, the veſicula umbilicalis, from which B, the remains of an artery and vein, in the form of a white thread, paſs to C, the navel of the embryo, with ſome turns of the inteſtines lodged in the beginning of the navel-ſtring.

Dr. Hunter has given to the public an inſtance of abortion in advanced pregnancy, where the death of the fœtus ſeems to have taken place in the fifth or ſixth month, by being entangled in its navel-ſtring; and the mother died from the violence of the hæmorrhage. Dr. Hunter on this occaſion remarks, that he never before obſerved an inſtance of any injury either to the mother or child, in conſequence of the navel-ſtring being twiſted in coils round the neck of the fœtus. He once ſaw it turned four times and a half round the neck without the ſmalleſt inconvenience; from which he infers, that in ſuch caſes there is a proportionable redundancy of length in the ſtring, and the child's head, gravitating towards it, might be caught in its coils, without occaſioning ſuch a conſtriction or knot as would impede the circulation through it. In the preſent caſe, however, the navel-ſtring formed a convolution at the ſame time round the neck, and round the leg, of the child, in a poſition that precluded every poſſibility of its receiving the ſmalleſt nouriſhment from the mother. In Plate VI. is given a correct repreſentation of this intereſting ſubject, ſhewing the full ſize of the fœtus, with the decidua reflexa upon the chorion, through which the child appears, and of which the following is an explanation: A, the rugous inſide of the neck of the womb, ſeen through the tranſparent covering. B, the ſubſtance, both of the womb and of the decidua, cut through. C, the decidua reflexa, covering the tranſparent membranes, in white and opaque ſtriæ. It was become ſo thin by extenſion, as to be rendered almoſt tranſparent in many places. It had not as yet contracted an adheſion with the decidua which covered it. D, a convoluted artery, branching

through the decidua reflexa, from the edge of the placenta. E, a vein of the ſame kind. F, a turn of the navel-ſtring round the child's neck. G, a convolution of the ſame round its leg. The cutaneous veſſels of the child were as diſtinctly filled with blood, as if they had been injected.

Abortion is not eaſily prevented, as it is often preceded by no apparent ſymptom, till the rupture of the membranes, and evacuation of the waters, announce the approaching expulſion of the fœtus. Either to remove threatening ſymptoms, or to prevent miſcarriage when there is reaſon to apprehend it, often baffles our utmoſt ſkill; becauſe it generally happens, that there is a ceſſation of growth in the ovum; or, in other words, an extinction of life in the fœtus, ſome time previous to any appearance of abortion. For inſtance, in early geſtation, a woman commonly miſcarries about the 11th or 12th week; but the age of the fœtus at this time is generally no more than eight weeks. At other times, when by accident the fœtus periſhes, perhaps about the fifth or ſixth month, it will ſtill be retained in utero, and the expulſion will not happen till near the completion of full time.

As women who have once aborted are ſo liable to a recurrence from a like cauſe, at the ſame particular period, ſuch an accident, in future pregnancies, ſhould therefore be guarded againſt with the utmoſt caution. On the firſt appearance of threatening ſymptoms, the patient ſhould be confined to a horizontal poſture; her diet ſhould be light and cooling; her mind ſhould be kept as tranquil as poſſible; a little blood from the arm may be taken occaſionally; and opiates adminiſtered according to circumſtances: but excepting ſo far as depends on theſe, and ſuch-like precautions, for the moſt part, in the way of medicine, very little can be done.

Manual aſſiſtance is ſeldom or never neceſſary during the firſt five months of pregnancy: the excluſion of fœtus and placenta ſhould very generally be truſted to nature.

The medical treatment of abortion muſt therefore be conſidered with a view only to the prophylactic cure: and this again will chiefly conſiſt in a proper attention to diet.

Mr. Lucas, of Leeds, has written ſome Hints on the Management of Women in certain Caſes of Pregnancy. In the courſe of his remarks, we find an account of his ſucceſs in preventing abortion, even in very delicate women, liable to miſcarriage, by obſerving a ſparing diet about the ſame period of pregnancy at which they had formerly miſcarried.

"Although (ſays Mr. Lucas) in moſt ſyſtematic writers on midwifery the ſubject of abortion, when immediately threatened, is fully diſcuſſed, yet few obſervations are to be met with reſpecting its *prevention in future geſtations*. Thoſe who are ſubject to



miſcarriage are often unhealthy, and of delicate habits. As the occaſional cauſes of abortion are ſeldom ſuddenly ſucceeded by the ſymptoms which immediately produce it, the preventive means are generally applied too late to be of material advantage. After a woman has been ſubject to miſcarriage, unleſs when it has happened from an external injury, there ſeems to be a peculiar diſpoſition to it about the ſame period of the next pregnancy; and even from ſuch ſlight cauſes, that I have known it to appear to be produced from a fit of laughter; while, on the contrary, thoſe who have never miſcarried are ſo little liable to abortion, that attempts to procure it have often rather endangered the life of the mother than accompliſhed the baneful deſign.

"Some years ago, I was called to a patient who had taken about a drachm of powdered cantharides, which brought on frequent vomiting, violent ſpurious pains, a teneſmus, and immoderate diureſis, ſucceeded by an acute fever, which reduced her to extreme weakneſs; yet no ſigns of miſcarriage appeared; and about five months after the woman was delivered of a healthy child.

"Accidents, or an acute diſeaſe, may be productive of abortion at any period of geſtation; but it uſually occurs about the third or the ſeventh month; and its prevention will be found more eaſy in the former than the latter ſtage. A ſtrict attention to the time at which the miſcarriage happened before, is neceſſary. By dating the commencement of pregnancy near a fortnight after the laſt menſtruation, the third month may be nearly aſcertained; and by obſerving the time of quickening, the ſeventh month may alſo be ſufficiently known. If women would be thus exact in their calculation, as to the time when parturition might be expected, it would ſave themſelves, as well as their attendants, much trouble; and it would rarely happen that the time could be miſtaken more than a fortnight.

"The preventive means, to which I would wiſh to ſolicit the attention of practitioners in midwifery, conſiſt in ſtrengthening the habit previous to a ſubſequent pregnancy; in taking away a few ounces of blood a week or two before that period of geſtation at which the laſt miſcarriage had happened; in adviſing a more abſtemious or leſs nutritive diet; in prohibiting the uſe of fermented liquors, or of any ſevere exerciſe, eſpecially ſuch as may affect the parts more immediately concerned.

"The following caſe may tend to illuſtrate the practice:

"In 1784, I was conſulted for a patient about thirty years of age, who had, in the ſpace of four years, miſcarried as many times; although ſhe had before been the mother of two healthy children. Her conſtitution was ſo delicate, that her friends thought her conſumptive. By the uſe of tonics, Buxton waters, and exerciſe on horſeback, her health was much amended,

" The latter end of December, 1785, ſhe began to have ſuch complaints as frequently attend the early part of pregnancy. The catamenia had ceaſed the 2d of November. January the 21ſt, ſuppoſed to be prior to the period at which ſhe had before miſcarried, I took three or four ounces of blood, and recommended a more ſparing diet; particularly in regard to animal food and fermented liquors. Having ſtrictly purſued this plan for a fortnight, ſhe was adviſed to return gradually to her accuſtomed mode of living. Although ſhe had before miſcarried about the third month, ſhe now paſſed that time without having any menacing ſymptoms. On the 28th of March the motion of the fœtus was firſt perceived. Previous to the ſeventh month, her habit was ſo much reduced by the treatment requiſite for an inflammatory fever that attacked her about that time, as to obviate the neceſſity of repeating the abſtemious plan; and which was alſo leſs indicated, from her never having miſcarried in the latter ſtage of pregnancy.

" After having completed the full time of pregnancy, with fewer complaints than uſual, on the 17th of Auguſt ſhe was delivered of a healthy child, to which ſhe gave ſuck; and has ſince enjoyed a good ſtate of health. Such treatment is chiefly adapted to prevent abortion about the third month; and no great expectation can be had from it in the latter ſtage, eſpecially if the placenta is attached to the os tincæ, and proves the cauſe of uterine hæmorrhage. It has failed even in a few caſes of early miſcarriage; but it has more frequently been found beneficial. I have ſometimes omitted a recommendation of it, where future experience has convinced me of its utility. It is requiſite but for a ſhort time, may eaſily be varied, and has been found to relieve complaints of the ſtomach often attendant on ſuch ſituations; nor does it in any reſpect interfere with the uſe of cold bathing, or other corroborants during the remaining part of geſtation.

SECT. II. *Of* ARTIFICIAL ABORTION.

With the ſubject of artificial abortion, the medical practitioner has nothing to do, further than as an early knowledge of the means employed to procure it may enable him to counteract them, and preſerve the lives of the mother and child.

Every woman who attempts to procure an abortion, does it at the hazard of her life; yet there are not a few who run this riſk, either to prevent ſhame, or the trouble of bearing and bringing up children. It is ſurely a moſt unnatural crime, and cannot, even in the moſt abandoned, be viewed without horror; but in a decent matron, it is ſtill more unpardonable. Thoſe wretches who daily advertiſe their aſſiſtance to women in this buſineſs, de-

ſerve the moſt ſevere of all human puniſhments. The ancient Greek legiſlators, Solon and Lycurgus, prohibited the practice of creating abortion under the ſevereſt pains and penalties. Whether or no it was permitted among the Romans, has been much diſputed between two learned modern civilians. It is certain the practice, which was by them called *viſceribus vim in ferre,* was frequent enough: but whether there was any penalty on it, before the emperors Severus and Antonine, is the queſtion. Noodt maintains the negative; and further, that thoſe princes only made it criminal in one particular caſe. viz. of a married woman's practiſing it out of reſentment againſt her huſband, in order to defraud him of the comfort of children: this was ordered to be puniſhed by a temporary exile: *ſiqua prægnans vim viſceribus ſuis intulerit ne inimico marito filium procrearet, temporali exilio coerceatur.* He adds, that there was no general prohibition of the practice before Gratian and Valens. It is true, we find in Cicero an earlier inſtance of a woman puniſhed for this fact; but it was in Mileſia, a country not ſubject to the Roman laws. Bynkerſhoeck, however, denies that a woman was allowed to drink the *poculum abortionis, impune*; and the reaſon he gives, is, that the womb was the huſband's property, who was declared by the laws the ſole cuſtos of it; to prevent being impoſed upon in the children he was neceſſitated to bring up. But then this does not affect women who had been impregnated by others than their huſbands. The foundation on which the practice is ſaid to have been allowed, was, the fœtus, while in utero, was reputed as a part of the mother, ranked as one of her own viſcera, over which ſhe had the ſame power as over the reſt; beſides that it was not reputed as a man, *homo*; nor to be alive, otherwiſe than as a vegetable, conſequently the crime amounted to little more than plucking unripe fruit from the tree. Vide Juven. Sat. 6. v 500. Senec. Conſolat. ad Helviam Matrem, cap. 16. This laſt-cited author repreſents it as a peculiar glory of Helvia, that ſhe had never, like other women, whoſe chief ſtudy is their beauty and ſhape, deſtroyed the fœtus in her womb.

The primitive fathers, Athenagoras, Tertullian, Minutius Felix, Auguſtin, &c. declaimed loudly againſt the practice, as virtual murder: *Homicidii feſtinatio eſt, prohibere naſci; nec refert natam quis eripiat animam, an naſcentem diſturbet.* Several councils have declared againſt it. Yet we are told that the modern Romiſh eccleſiaſtical laws allow of diſpenſations for it. Egane mentions the rates at which a diſpenſation for it may be had.

The practice of artificial abortion is chiefly in the hands of women and nurſes, rarely in that of phyſicians; who, in ſome countries, are not admitted to the profeſſion without abjuring it. Hippocrates, in the oath he would have enjoined on all phyſicians, includes their not giving the *poſſus abortivus;* though elſe-

where he gives the formal proceſs, whereby he himſelf procured a girl to miſcarry. The time for it is preſently after impregnation, at leaſt within the third or fourth month of geſtation. The manner of effecting it is chiefly by medicines of the purgative and deobſtruent kind. Roman authors ſpeak of the *poculum abortionis*, or abortive draught, frequent among them. External violences are alſo ſometimes had recourſe to, as leaping from a ſtool, preſcribed by Hippocrates. Obſtinate faſtings, and vehement evacuations, have been frequently practiſed for the ſame end. Yet all the powers of medicine often fail to procure abortion, by reaſon of the naturally cloſe contraction of the orifice of the uterus; which has been known to hold out againſt the moſt malignant fevers, dyſenteries, ſalivations, and the like; againſt the ſtrongeſt aperients and evacuants; againſt the diſtilled oil of juniper, ſavin, ſuccinum; againſt large quantities of *crocus metallorum, artemiſia*, myrrh, mercury. the ſarina of *muſcus terreſtris*, &c. The moſt fatal method is by punctures of the uterus, with a pointed inſtrument for the purpoſe, too often uſed among us, and not unknown to the ancients. Patin mentions a midwife hanged at Paris, for killing a fœtus in the womb, by running a ſtiletto, or kind of bodkin, up the vagina, through the orifice of the uterus; by which a miſcarriage was produced, but with ſuch ill ſucceſs, that the mother was ſeized with convulſions, and died miſerably. The criminal confeſſed ſhe had treated many before in the ſame manner with good effect. Our own age and country affords a parallel inſtance, a woman having been ſome years ago executed among us for the like fact. Tertullian has a paſſage, which ſhews the ſame was practiſed in thoſe days: *eſt etiam æneum ſpiculum, quo jugulatio ipſa dirigitur cæco latrocinio* εμβρυος-φακτην *appellant, utique viventis infantis peremptorium*. The operation, conſidering the tenderneſs of the part, muſt be of the utmoſt danger. Brendelius gives an account of what he obſerved in diſſecting a girl at Norimberg, in 1714, who died of the operation which ſhe had performed on herſelf: the neck of the uterus appeared exceedingly diſtended, the veſſels lacerated and mortified, the uterus itſelf inflamed and putrefied, &c.

When the time of pregnancy is far advanced, abortion is not to be procured by artificial means without extreme danger; for the fœtus being large, and the means violent, a profuſe hæmorrhage precedes and enſues, attended with convulſions, fever, and perhaps a mortification of the womb. Yet every woman, during the whole time of her pregnancy, is more or leſs in danger of abortion; and therefore ſhe ſhould guard againſt it with the utmoſt care and circumſpection, eſpecially in the latter months, when it cannot happen, even by accidental means, but at the hazard of her life. In theſe advanced ſtages, the pains are much the ſame, and ſometimes more violent, than thoſe of labour;

manual affiftance in fuch cafes frequently becomes neceffary; directions for which are given in their proper place.

With regard to the treatment. This muft be varied according to the particular circumftances of the cafe: nor is it poffible to point out particular indications, where the caufes are fo various.

CHAP. XII. Of REGIMEN during PREGNANCY.

Women in general, when pregnant, fhould live regular, temperate lives; moderation in eating and drinking fhould now be very carefully obferved, and every thing that has any tendency to difagree with the ftomach fhould be avoided; otherwife the manner of life fhould be much as ufual. If complaints do occur, thefe fhould be treated as at other times; only guarding againft fuch things as, by violent operation, may endanger mifcarriage. If the woman has formerly been fubject to this accident, the caufe fhould be carefully confidered, and fuitable remedies applied; if plethoric, for inftance, fhe fhould be blooded, live fparingly, and keep quiet, till fhe gets beyond the dangerous period. If fhe be weak, delicate, and nervous, bark, light aromatic bitters, mineral waters, and the cold bath (if able to bear it), will prove the beft prophylactic remedies. The cold bath has, in many cafes, cured the moft obftinate fluor albus, and fometimes even fterility itfelf; and, in relaxed habits, difpofed to mifcarriage, when every other means has failed, the cold bath has done confiderable fervice: the practice may fafely be continued for fome months after conception, when it has been early begun, or when the patient has been accuftomed to it. Such a fhock will, however, act very differently on different fyftems; hence it is an expedient by no means to be indifcriminately ufed in the pregnant ftate.

Abortions that happen in early geftation, and that come on fuddenly without any prefaging fign, if ever they are to be prevented, it can only be done by avoiding all occafional caufes, by counteracting morbific difpofitions, and by confinement to a horizontal pofture for fome time before, and till the critical period be over.

When a venereal taint in the parents is fufpected to be the caufe either of abortion or the death of the fœtus, the like accident can only be prevented by putting both parties on a mercurial courfe.

Pregnant women require a free, pure air; their amufement fhould often be varied; their company fhould be agreeable and cheerful; their exercife fhould be moderate, and fuited to their inclination, conftitution, and the feafon; they fhould avoid crowds, confinement, travelling over rough roads in a car-

riage, or being expofed to fea-voyages. Riding on horfeback fhould alfo be practifed with great caution, that difagreeable objects may be fhunned, and fhocks of every kind prevented. For this reafon, when riding is judged proper, the woman fhould be a courageous rider; fhe fhould never ride without fomebody being in company; the horfe fhould be tame and well trained; the road fhould be fmooth as well as private; and the exercife fhould be gentle and eafy, and never carried the length of fatigue. Women fhould, with the utmoft care, guard againft confining the breafts or belly; early recourfe fhould be had to jumps, and they fhould keep themfelves as loofe and eafy as poffible through the whole term of utero-geftation. An open belly is neceffary and important in the pregnant ftate; it keeps the ftomach in good condition, prevents colics and other complaints that may terminate in mifcarriage. When the abdomen is pendulous towards the latter months, a gentle fupport by proper bandage will prove ufeful; and the woman, when fatigued, fhould occafionally, through the day, indulge in reft on a bed or couch.

CHAP. XIII. Of PROLONGED UTERO-GESTATION.

On this obfcure and doubtful fubject, little information, of a fatisfactory nature, has ever been, or perhaps ever will be, communicated. We fhall therefore content ourfelves with laying before the reader the following cafes and remarks of the defervedly eminent Dr. Smellie. Speaking of women who exceed the common term of geftation, he fays:

"I was befpoke to lay a young woman of her firft child. She was taller than the middle fize, and had been healthy from her infancy. She was married in September, about a week after the menftrual difcharge, which, not returning at the ftated time, fhe was feized with the ufual complaints of ficknefs and retching, which her mother fuppofed to be certain figns of pregnancy; and though fhe reckoned only to the beginning of June, fhe was not delivered till the end of Auguft. Before marriage, the menfes had flowed regularly every four weeks, and though fhe, perhaps, did not conceive immediately after wedlock, it was reafonable to fuppofe fhe actually exceeded the ufual term of geftation by four or five weeks at leaft. Her labour was very tedious, though the pelvis was of a large fize; but the child was very lufty, and the head fqueezed into a longitudinal form. Two years after, I delivered her of a fecond child, which was alfo very large; yet the labour was fhort, and happened according to the common time of reckoning; nor was the head of this laft fqueezed into a longifh form, like that of the firft, which was indeed the largeft child I ever brought into the world."

A ſecond caſe he deſcribes thus :

" I was called by a midwife to a woman in child-bed, and found the breech of the fœtus preſenting at the brim of the pelvis, where it ſtuck for ſome time, without advancing, although the mother had been long in labour, and the membranes had been broken eighteen hours before I came. I with great difficulty puſhed up the breech, and brought down the legs ; and, after much fatigue, delivered her of a live child. According to this woman's reckoning, ſhe had exceeded the uſual time of geſtation by eight weeks ; for ſhe affirmed, and her mother confirmed the aſſertion, that ſhe had but one diſcharge of the menſes after ſhe was married, and in the middle of the month was ſeized with the common ſymptoms of pregnancy, from which they concluded ſhe had conceived ſoon after the evacuation.

" I have ſelected theſe two caſes, from a great number of leſs certainty, to ſhew, that women may, probably, go with child beyond the nine months ; though this is a circumſtance that rarely happens. Indeed I have known many women exceed that period by their own reckoning ; but I have generally ſuppoſed they committed ſome error in keeping the account.

" In Lamotte (liv. 1. ch. 27, and 28), we read of women who have been delivered a conſiderable time before and after the time of reckoning. ' I myſelf,' ſays Dr. Smellie, ' very often find my patients go two or three weeks beyond the nine months, reckoning from the laſt diſcharge of the menſes.' "

THEORY OF MIDWIFERY.

PART II.

Of LABOURS.

LABOURS are divided into three classes: *natural, laborious*, and *preternatural*.

In whatever manner the head of the child presents, where the delivery at full time is performed by nature, the labour is with great propriety called *natural*; when the birth is protracted beyond the usual time, or cannot be accomplished without extraordinary assistance, it is deemed *laborious*; and *preternatural*, when any other part but the head presents.

CHAP. I. Of NATURAL LABOUR.

By whatever power the uterus is enlarged, when any further increase is prevented, a stimulus to contraction must ensue; by this means an uneasy sensation is excited, which must, in the woman, produce an effort to procure relief; and thus arise the true labour pains, which at first are slight and of short duration, a considerable remission intervening: the periods of recurrence soon become more frequent; the pains acquire an increased force, producing more and more change on the os uteri; which, yielding to the impelling cause, gradually opens and expands; till at length it becomes completely dilated, the membranes protruded and ruptured, and the child, by the expulsive force of the uterus, assisted by that of the diaphragm and abdominal muscles, is thus pushed along and delivered.

The symptoms of approaching labour are, the subsiding of the abdominal tumor: hence a discharge of mucus from the vagina, sometimes tinged with blood; incontinency, or suppression of the urine; tenesmus; pains of the belly, loins, and about the region of the pubes; restlessness, hot and cold fits, &c.

Spurious pains are to be carefully distinguished from those of

genuine labour. The former arife from the ftretching of the uterus, and its preffure on the neighbouring parts, or from coftivenefs; and are to be diftinguifhed from the latter by the following fymptoms: They are moft troublefome towards the evening, increafe in the night, and abate through the day; they are more trifling and irregular than true uterine pains; the uterine orifice is not affected; and there is no increafed flow of mucus from the parts.

True pains begin about the region of the kidneys, ftrike forward towards the pubes, and down the thighs: they return at regular periods; there is a copious difcharge of mucus from the vagina; the os uteri gradually opens, and can be felt to dilate in time of a pain; while the membranous bag, in a tenfe ftate, forcibly pufhes againft the finger.

The event, in labour, is fo precarious, that no certain judgment can be formed from almoft any fymptoms, till the labour itfelf be confiderably advanced. A prognofis in general is chiefly to be formed from the age, ftate of health, and temperament of the patient; from the force, duration, and recurrence of the pains; and from their effect on the uterine orifice: from the time of the rupture of the membranes; from the general make and form of the woman, but, in particular, of that of the pelvis; from the bulk and pofition of the child, &c.

With regard to the method of delivery, and pofition of the woman, this has been different at different ages, and in different countries: the chief thing, however, is to guard againft cold and fatigue, obferving that the woman be placed in the moft favourable pofture for fupporting the back, for the action of the abdominal mufcles, &c. and moft convenient for the neceffary affiftance. Till the labour is confiderably advanced, fhe may be indulged in whatever pofture is moft agreeable; after which the bed or couch is the moft proper.

With regard to affiftance in natural parturition, the accoucheur for the moft part has little to do, till the membranes are ruptured, and the head in perinæo. In time of labour, the woman fhould be kept very cool, and every means of being overheated fhould be avoided. She fhould be put to bed in proper time, placed on her fide or back, with her head and fhoulders a little raifed, a cloth tied to the bed-poft, or held by an affiftant, to fupport her hands in time of pain, and her feet refting againft a foot-board; her knees fhould be drawn up towards the belly, and a folded pillow put between them. All efforts to prefs or ftrain, except what nature excites, are improper, hurtful, and fhould be avoided: the membranes, if poffible, ought not to be ruptured till they almoft protrude at the os externum; the perinæum muft be lubricated when formed into a tumor, and carefully fupported while overftretched; for this purpofe, a cloth fmoothly folded fhould be

applied over the part, to enable the accoucheur to have a firmer hold. This is an important part of his office, and muſt be attended to with the ſtricteſt care. From the time this protruſion begins to form till the head of the child be completely delivered, the perinæum muſt be carefully preſerved by the palm of the hand firmly applied againſt it, which ſhould be carried backwards in a direction towards the anus, and kept ſo during every pain. Thus the miſerable conſequences will be prevented to which the neglect of this preſſure expoſes; for by this ſupport the overſtretching of the perinæum will be greatly leſſened, the parts will dilate gently and gradually, the vertex will eaſily ſlip from under the pubes, and the forehead will riſe from under the perinæum in a ſafe, ſlow, and gentle manner. The perinæum muſt now be releaſed, by cautiouſly ſliding it over the face and chin of the child; and this ought to be made further ſure of, by paſſing a finger under it round and round. After the head has thus mechanically advanced through the pelvis and vagina, a pain or two muſt be waited for, when in like manner the body will follow; nothing more being neceſſary than to ſupport the child while it is gradually puſhed forwards by the expulſive force of the natural pains.

When the child has cried, and the change in the circulation freely taken place, the funis umbilicalis muſt be tied and divided, the infant muſt be wrapped in a warm receiver, and given to the nurſe to be waſhed and dreſſed.

The parts of the woman muſt now be gently wiped, a warm ſoft cloth muſt be applied, and a proper time waited for the ſeparation of the placenta.

This is alſo the work of nature, and ſeldom requires more force to bring it along than if it lay entirely looſe within the cavity of the uterus. Thus, in pulling, no greater force ſhould be employed than is juſt ſufficient to put the funis on the ſtretch: for if it is already ſeparated, no violence is neceſſary to extract it; and if the adheſion is very firm, all violent efforts are improper, and often followed with moſt dangerous conſequences. Its advancing is known by the contraction of the uterus, and ſhifting of the abdominal tumor, and by the lengthening of the cord. By the ſpontaneous contraction of the uterus, this ſeparation is effected; the expulſion will be ſlower or more expeditious, according to the ſtate and condition of the woman, according to the number of children ſhe has born, and according to the duration or violence of the labour; it is eaſier and ſooner ſeparated in a firſt birth, when the woman is in good health, and when the labour has been properly managed. In moſt caſes, this ſeparation is accompliſhed within half an hour after the delivery of the child. It adheres moſt firmly after premature births, when the woman has been ſickly during pregnancy, where the labour has been tedious

and difficult, or when hasty attempts have been made to extract it. A finger, or a finger and thumb, guided by the funis, and introduced within the vagina, to bring down the edge, will remove any difficulty occasioned by the centre or bulky part passing the uterine or vaginal orifice.

When it becomes necessary to employ force in extracting the placenta, which is never requisite but in cases of flooding, when the woman has been in bad health during pregnancy, when she has suffered much in time of labour, or when the string has been torn from it (though the first of these cases is perhaps the only one wherein the practice is absolutely proper), the method of doing it is as follows: In ordinary cases, the woman should be laid on her back or side; but when the belly is pendulous, or when the placenta is attached to the fundus uteri, she must be placed on her knees, which is the most convenient posture.

The accoucheur, though with a certain degree of courage, yet with the utmost possible tenderness, must then pass his hand well lubricated through the vagina into the uterus, and feel for the convex body of the after-birth; if the chord be entire, this will direct him; if not, he must feel for the loose membranes at the edge of the cake, and must not be deceived by coagula of blood that lie in the way; if the uterus be constricted in the middle like a sand-glass, a circumstance that sometimes, though rarely, occurs, this must be overcome by a gradual dilation with one finger after another, till the whole hand in a conical manner can safely be passed. He must not content himself with feeling a part; he should be able to move his fingers round the whole body of the cake; the adhesion must be separated very gradually, in a direction from the sides round and round. The placenta is distinguished from the uterus, as well by its softness as by its convex puckered feel. This convexity increases in the same proportion as the uterus contracts: hence the middle part or centre of the placenta is first detached; and if the edges are carefully separated, by gently passing the fingers behind, the whole body becomes loose and disengaged, which must now be brought along with great caution, that no part be left behind, and that no injury be done to the woman in making the extraction.

Though bad consequences sometimes follow from the retention of the placenta, yet it is much to be questioned, if these are not less to be dreaded than the dangerous floodings, convulsions, deliquia, inflammation of the uterus, fever, &c. that may be induced from the too prevalent practice of passing the hand to make the extraction: and would it not in general be better to confine the practice of introducing the hand, to cases of uterine hæmorrhages only? Where the adhesion is so firm as to require force, or where its place of attachment is out of the reach of the finger, by which, for the most part, the edge may be brought down, is

it not by far the ſafeſt and the moſt rational practice univerſally to truſt to nature? Should the mouth or body of the uterus become conſtricted before the ſeparation is effected, no matter; little is to be dreaded: it will afterwards kindly dilate; and the ſeparation and expulſion will ſpontaneouſly be accompliſhed with as much ſafety as in other animals, where no force is ever uſed. Let every candid practitioner acknowledge, that for one inſtance where the retention of the placenta has been attended with dangerous conſequences, its precipitate extraction has proved fatal to hundreds:—we ſhall, elſewhere, conſider what is ſaid on the other ſide.

After the delivery of child and placenta, the woman muſt reſt a few minutes; her ſtrength and ſpirits may be recruited by ſome light nouriſhing cordial; the wet cloths, &c. muſt then be removed; the bed muſt be properly ſhifted and adjuſted, and a gentle compreſſion muſt be made on the abdomen.

During lying-in, the woman ſhould avoid company and noiſe; her dreſs and bed-linens ſhould be often changed; ſhe ſhould avoid every means of being overheated; and with regard to her diet, it ſhould, for the firſt week at leaſt, be very light, and of eaſy digeſtion.

Under the head of Natural Labours, the following caſes are recorded by the celebrated Dr. Smellie.

Of the Os Internum opened by the waters and membranes.

Case I.—"I was beſpoke," ſays he, "to attend a woman in her firſt child, and received a call about the middle of the ninth month, when ſhe complained of pains in her head and back, and I underſtood ſhe was coſtive, and troubled with a teneſmus, which ſhe miſtook for labour-pains. After having felt her pulſe, which was quick, ſat by her for ſome time, and put the neceſſary queſtions to the nurſe, I directed the patient to lie down on the ſide of the bed, and a quilt being thrown over her, placed myſelf behind, in order to examine. I found the os internum ſoft, but not open; from which circumſtance I declared ſhe was not in labour: then I ordered her to be blooded to the quantity of eight ounces, and a clyſter being injected, ſhe was relieved of her complaints. In a fortnight after this viſit I was called again, and found the labour begun; the os uteri was exceeding thin, and open to the breadth of half-a-crown, the membranes, with the waters, were puſhed down by every pain, and the child's head reſted upon the upper part of the os pubis. For three or four days, ſhe had been ſubject to ſlight pains, which returned at long intervals, then they became more frequent, recurring every two hours, and by that time I was called, they had grown ſtronger and came faſter. As ſhe was ſtill coſtive, I preſcribed an emollient clyſter, by which the indurated fæces were diſcharged, and

then the labour proceeded in a flow and kindly manner, the membranes gradually opening the mouth of the womb. I did not confine her to any particular pofition, but allowed her to walk about, and undergo her pains, either fitting or lying in bed. The membranes having fully opened the os internum, and being pufhed down in a globular form to the lower part of the vagina, gave way during a pain, while fhe ftood leaning on the back of a chair, a large quantity of waters was difcharged, and the child's head funk down into the pelvis. This was her firft child; fhe was of a ftrong conftitution, and the external parts were very tight; fo that I would not put her to bed, until the head fhould have come lower down, and gradually opened the os externum. But thefe parts being pretty well diftended, and every thing faft approaching towards delivery, fhe was put to bed, which was prepared by the nurfe, and laid on her left fide: at every pain the head advanced further and further, the remaining part of the waters was gradually forced down, fo as to lubricate the parts: I then plainly felt the ear of the child at the pubis, the hind head at the lower part of the left ifchium, th. lambdoidal future croffing the end of the fagittal, and the fontanelle on the other fide, higher up in the pelvis, at which part the fagittal was likewife croffed by the coronal future. As the head advanced, the occiput was turned in below the os pubis: the foft parts of the mother, backwards, were protruded in form of a large tumor, the os externum was widened more and more, the perinæum lengthened to three fingers breadth, and the fundament to two: the crown of the child's head turned gradually upwards towards the upper part of the labia, the forehead being backwards at the lower part of the facrum and coccyx: advancing ftill, the back part of the neck was felt below the pubis; then the perinæum being ftretched to four or five fingers breadth, very tenfe and thin, I applied to it the flat part of my hand, during each fucceeding pain, in order to prevent its being torn, and let the head be delivered in a flow manner, by raifing up with an half-round turn below the os pubis. The fame pain that delivered the head, forced down the fhoulders, which I helped eafily along with my fingers placed towards the armpits. I kept the child, after it was delivered, under the clothes, until it began to breathe and cry: then I tied and divided the funis, put a warm cloth round the head, and wrapping it in a receiver, gave it to one of the affiftants. The placenta was gradually forced down into the vagina, and extracted by pulling gently at its lower edge, and at the funis. The child was a ftrong, healthy boy, and the mother recovered to my wifh."

Dr. Smellie profeffes to have given a particular detail of this cafe, in order to make young practitioners acquainted with the common method of acting in natural labours, thefe being the

circumſtances that uſually occur to an healthy woman, in bearing her firſt child. Some ſlight pains recurring now and then for ſome days before the real labour, are of advantage in ſlowly and inſenſibly dilating the os uteri; ſo that when the pains grow ſtronger, the delivery is the ſooner effected. The os internum is very different in different women, with regard to the thickneſs and rigidity, and in proportion to theſe, requires more or leſs time for the dilatation. In forty-nine caſes out of fifty, the membranes break after the os internum is fully opened, ſo as that they are protruded into the middle or lower part of the vagina. After theſe are broke, the pains frequently abate for a ſhorter or longer time, and then growing ſtronger, the child's head is forced lower down, and the forehead turns gradually from the iſchium into the hollow of the ſacrum. Time ſhould now be given for the vertex to open the os externum, and this is moſt ſafely effected by ſlow gradual pains; for there is ſeldom occaſion to lubricate or uſe other means for ſtretching the parts. Indeed, in natural labours, almoſt our whole buſineſs conſiſts in encouraging the patient, and preventing the fourchette or frænum labiorum from being torn, when the head is protruded through the os externum. For although it is commonly ſaid, that ſuch a woman was laid by ſuch a perſon, the delivery is generally performed by the labour-pains; and, if we wait with patience, nature of herſelf will do the work. We ought not, therefore, to fatigue the patient by putting her too ſoon in labour, according to the common phraſe, but to attend carefully to the operation of the pains, and in moſt caſes we ſhall have nothing elſe to do but receive the child.

II. Dr. Smellie alſo delivered a woman in the beginning of the ſeventh month, of her third child. Her huſband had died ſuddenly about twenty days before, and upon that occaſion ſhe had felt the child move with great violence, and this was ſucceeded by a kind of tremulous motion, after which ſhe never felt it ſtir. On the nineteenth day after this accident, ſhe was taken with a looſeneſs, which brought on labour-pains; the membranes broke when the mouth of the womb was fully opened, and ſhe was immediately delivered of a dead child, which paſſed eaſily along, though its abdomen was much ſwelled.

CASES *of the Os Externum opened by the membranes.*

I. "I was called," ſays the author, "to one of the poor women whom my pupils were to attend, and examining in time of a pain, I found the waters had puſhed the membranes through the os externum, in a large, round, globular figure. When the pain abated, and the membranes became lax, I could eaſily with my finger feel the child's head at the lower part of the vagina. I deſired her to lie down with her breech to the bedſide, and be covered with a quilt. The pains, which were ſtrong, returning

at ſhort intervals, forced the membranes and waters with the child's head through the os externum; even the ſhoulders and part of the body were delivered before the breaking of the membranes, which then gave way, tearing all around from the edge of the placenta, and remaining upon the head and body of the child, which could not breathe until I had ſtripped them off. The woman had borne children before this labour; the pelvis was large, the child come to its full time, and of an ordinary ſize, but the placenta came off with difficulty. I underſtood ſhe had not undergone above ſix pains when I arrived, and before the pupils could have notice to come ſhe was delivered. She expreſſed great joy when ſhe knew the child was born with a caul, which ſhe dried and carefully kept, in full perſuaſion that her child would never ſuffer extremity either by ſea or land, while it remained in her poſſeſſion.

2. "In the ſame year," continues he, "I was called to another poor woman, whom I delivered by myſelf. The membranes, waters, and head, were protruded through the os externum, while the patient ſtood leaning on the back of a chair: then the membranes breaking, were torn all round before the ſhoulders were delivered, and remained ſticking on the head: the ſame pain brought forth the body and the placenta, and I arrived juſt in time to prevent the child's falling on the ground.

3. "I attended a perſon who fell in labour in the latter end of the eighth month: ſhe had formerly had quick labours, and now the pains were ſtrong and frequent. The membranes and waters had opened the os externum, and the head of the child was low down, though it did not advance in proportion to the protruſion of the membranes, which, at laſt, were forced down about the ſize of a child's head, without the os externum. While the head was retarded in this ſituation, the weight of the waters ſtretched down the membranes and formed the appearance of a large bag, narrow at the upper part, which I pulled away, and threw into a baſon. In three pains more ſhe was delivered of a child, which had been dead eight or ten days, with a ſwelled abdomen, which had retarded the birth.

4. "I was called, in a great hurry, to a gentlewoman in labour of her firſt child, in the beginning of the ſeventh month; but, before I arrived, the membranes, with the placenta, waters, and child, were delivered altogether, and put in a baſon by the nurſe, ſo that I found the membranes whole, and the child ſwimming in a great quantity of water. Without remembering to ſearch for the allantois, I opened them in a hurry, and perceived that the child had been dead ten or fourteen days.

5. "In the ſame year my aſſiſtance was demanded for another patient, come to the full time in her firſt child: the labour was ſlow, but by degrees the waters and membranes opened the os

internum and externum, without breaking, and the woman was delivered of a dead child, whose belly was swelled.

6. " In the next year I delivered a woman in the eighth month, whose os externum was opened by the membranes and waters, which were pushed out a great way : the child's head was likewise partly protruded, but yielded a very uncommon impression to the touch, as if there had been another set of membranes and waters, within which I thought I felt the loose bones of the skull. When I broke the membranes, I felt the hairy scalp, and discovered an hydrocephalus in the child, which was soon delivered, and lived some days, though, from its continual moaning, it seemed to be in great agony."

" Besides these," continues Dr. Smellie, " I have assisted in a great number of cases, where the membranes have opened the os externum, and the head has been delivered before they broke. Indeed, in all natural labours, I wait for this operation, which renders the passage for the child much more easy ; and I never tell the good women whether or not the membrane remains upon the child's head, that they may not have an opportunity of indulging an idle superstition."

CASES *of the Os Internum opened by the child's head and membranes. Also of the Os Externum opened in the same manner.*

1. " Being called to a woman in labour of her second child," says our author, " I felt the mouth of the womb largely open, and the midwife said that the membranes were broke. This declaration had alarmed the women, who entertained an idle notion that if she was not immediately delivered, she would lose her opportunity ; and indeed this apprehension was the cause of my being employed. After she had undergone two or three pains, I found that the head had gradually increased the dilatation of the os internum, that the membranes were not yet broke, and that the midwife had certainly mistaken a small discharge of the urine for the waters. I then assured the patient that she was in no danger ; and that even though the membranes had been broke, the delivery ought to be left to the labour-pains : in consequence of which the head was soon forced down into the middle of the pelvis, and the os uteri being fully dilated, I felt the membranes very smooth. Another pain forced the head down to the lower part of the pelvis, when the membranes splitting upon the head, I could plainly distinguish the hair of the scalp ; and the patient was, in a little time, safely delivered by the midwife. I could feel no waters during labour, and there was only a small quantitydischarged, when the body was delivered.

" Both before and since this occasion, I have been concerned in many cases of the same nature, which generally prove easy and

ſucceſsful, and happen when the child is ſurrounded by a ſmall quantity of water. I have been ſometimes puzzled to know, whether or not the membranes were broke, until the head came ſo low down, that I could eaſily introduce the fore and middle fingers, and feel the hair of the ſcalp. However, this uncertainty is of no conſequence in ſuch eaſy labours: at other times, I could feel no waters, until the head deſcended low down, and then I have perceived them protruding the membranes at the back part of the pelvis.

2. " I attended at a labour in which the child's head came down in the ſame manner as that deſcribed in the preceding caſe: the child was ſmall and came eaſily along; but I could feel no waters, nor did the membranes give way until the head was delivered. In other caſes, where there was little or no water, the membranes generally broke ſooner.

CASES *of a ſmall Child or large Pelvis.*

1. " I was called to a gentlewoman who had beſpoke my attendance, in conſequence of her having been formerly ſubject to lingering labours, from the large ſize of the child, and the ſmallneſs of the pelvis; but before I could reach the place, ſhe was delivered; and this uncommon facility proceeded from the very ſmall ſize of the child, which was born four or five weeks before the end of her reckoning.

2. " My attendance was beſpoke for a woman in her firſt labour, by her friends, who were afraid it would be difficult, becauſe ſhe was pretty much diſtorted, had been ſickly during pregnancy, and took but very little nouriſhment. For two or three days ſhe had been ſubject to ſlight pains; but when they became ſtronger, I was ſuddenly called, and when I reached her houſe, found the child coming into the world. It was very ſmall, the pelvis of a middling ſize, and the os uteri was puſhed down without the os externum. The ſuddenneſs of the delivery occaſioned an inflammation of the mouth of the womb, which abated in conſequence of her drinking plentifully of diluting liquors: yet, after the ninth day, ſhe complained of great pain in that part when ſhe ſat up, but was tolerably eaſy while ſhe lay in the bed. For this reaſon, I preſcribed a longer term of confinement than is uſual, and directed a ſponge dipt in warm claret to be put up in the vagina, and this application to be repeated ſeveral times in a day. By theſe means the complaint vaniſhed about the end of the month.

3. " I was called to a patient on the thirteenth day after delivery, who laboured under the ſame complaint which I have deſcribed in the preceding caſe, and which was likewiſe the conſequence of ſudden delivery. The pelvis was large, and the os uteri being ſwelled and painful to the touch, I ordered her to be

confined to her bed. The family physician being consulted, it was agreed, that she should drink plentifully of weak caudle, chicken-broth, and, for a change, barley-water, in order to promote a diaphoresis; and that equal parts of the emollient decoction and French claret should be applied in the vagina, with a fine linen rag. For many days the pain always returned when she rose from bed, till one night, being told the child was very ill, she ran up to the nursery in a hurry, and this motion entirely carried off the complaint."

"I have been concerned in many cases," continues Dr. Smellie, "where the women suffered, though not to such a degree, when the labour was precipitate, the child small, or the pelvis large.

"Many women have bespoke my attendance, and notwithstanding all my expedition, have been delivered before I could reach the place. One woman in particular bore five children so suddenly, that although I lived in her neighbourhood, and happened always to be at home, I never could arrive time enough to assist her, except in her first child."

CHAP. II. Of LABORIOUS, or DIFFICULT LABOUR.

Sect. I. *Of the* Causes *of* Laborious Parturition.

When the birth is protracted beyond the ordinary time, or when the child's head, though naturally presenting, cannot be brought forwards without assistance, the labour is accounted difficult, or laborious.

Though the causes of laborious births are various and complicated, they may in general be considered as depending,

I. On the mother.
II. On the child.
III. On the secundines.

I. *The birth may be protracted, or the labour pains interrupted, by,*

(1.) Debility in the mother, arising,

a From disease, *viz.*

1. Flooding.
2. Epileptic fits.
3. Crampish spasms.
4. Lowness and faintishness.
5. Inflammatory diathesis:
6. Colic.
7. Nauseating sickness and vomiting.
8. Hectic or consumptive habit.

b From paſſions of the mind.
c From miſmanagement in time of labour.
(2) Local complaints in the parts, or their neighbourhood, *viz*.
a In the bones, occaſioning narrowneſs and diſtortion.
b In the ſoft parts, *viz*.
1. Dryneſs and conſtriction of the vagina.
2. Thickneſs and rigidity of the os tincæ.
3. Scirrhous or polypous tumors about theſe parts.
4. Accumulated fæces in the inteſtines.
5. Stone in the urethra.
6. Prolapſus of the uterus, vagina, and rectum.
7. Obliquity of the uterus.

II. Difficulties alſo ariſe on the part of the child, *viz*.
1. From the bulk and oſſification of the head.
2. The ſituation in which the head preſents.
3. Large broad ſhoulders, or their tranſverſe deſcent through the pelvis.

III. The ſecundines, *viz*.
1. The rigidity of the membranes, and the contrary.
2. Too great a quantity of water.
3. The funis umbilicalis too long or too ſhort.
4. The prolapſus of the funis before the child's head; and,
5. The attachment of the placenta towards the cervix or os uteri.

The treatment of laborious births requires a very nice and careful attention to the condition of the patient and other circumſtances, from whence only we can judge when aſſiſtance becomes requiſite, and how it may be applied to the beſt advantage. That pain and miſery is the unavoidable and inſeparable attendant of child-bearing, though dealt out in different proportions to different ſubjects, the teſtimony of all nations, and all ages, as well as daily experience, bear witneſs: nor is the eaſieſt labour altogether exempted from pain, even under the moſt favourable circumſtances. The delivery, however, promiſes to be ſafe and eaſy, when the woman is of proper age, in good health, the child preſenting right, and the pelvis well proportioned; but the force of the natural pains may be interrupted, and of conſequence labour be retarded, from,

(1.) Debility in the mother, ariſing from

a Diſeaſe. This may appear under various forms; as,

1ſt, *A flooding*. Which is very alarming, even along with labour pains: though leſs ſo in this caſe than when at a diſtance from full time; becauſe as the labour pains increaſe, the hemorrhagy very generally abates: or if not, breaking the membranes when the aperture of the os uteri is ſufficient to admit the hand, ſeldom fails to produce that effect. The woman in this caſe muſt be kept cool. Opiates muſt be adminiſtered; ſhe muſt be com-

forted with the beſt aſſurances of a happy delivery; and the natural pains muſt be waited for.

But if the hemorrhagy proceeds from a ſeparation of the placenta, attached towards the cervix or orificium uteri; in this unhappy caſe, the whole body of the cake may be completely ſeparated before the aperture of the uterus be ſufficient for allowing the head to paſs, and the deluge may be ſo ſudden and impetuous, that the woman will ſink immediately under it. Breaking the membranes, and making the delivery, either by turning the child, or extracting with the forceps or crotchet, according to circumſtances, with as much expedition as is conſiſtent with the mother's ſafety, is the only expedient by which the threatening cataſtrophe may be prevented.

2dly, *Epileptic fits* may in like manner retard labour, and endanger the life of the mother. If the child is not thrown off by a few fits, which is often the caſe, the delivery ſhould be effected as ſoon as poſſible.

3dly, *Crampiſh ſpaſms* in the thighs, legs, rarely in the belly, are very troubleſome. They depend on the preſſure of the head on the nerves as it paſſes through the pelvis, and can only be removed by delivery; which, as theſe pains are ſeldom if ever attended with danger, are not to be forced on this account. Breaking the membranes will ſometimes remove them.

4thly, Lowneſs and faintiſhneſs often occur, and frequently prove the cauſe of protracted labour.

No general rules with regard to the management of ſlow labour can be recommended. The mode of treatment, where ſo many circumſtances may occur, muſt be ſuited to the condition of the patient, as every particular caſe will, in ſome meaſure, require a different management. Much depends on the prudence and judgment of the attentive practitioner. For inſtance, when the woman is nervous, low-ſpirited, or weakly, from whatever cauſe, in general her ſtrength muſt be ſupported: ſhe muſt not be put on labour too early; ſhe muſt avoid heat, fatigue, and every means of exhauſting her ſtrength or ſpirits. When ſhe is reſtleſs, or the pains trifling and unprofitable, opiates are particularly indicated; they remove ſpurious or grinding pains, recruit the ſpirits, procure reſt, and amuſe time. Little elſe for the moſt part is to be done. If the uterus once begins to dilate, though the dilation goes on ſlowly, it is by much the beſt and ſafeſt practice to do nothing but regulate the management as above. The pains at laſt will become ſtrong and forcing; and the delivery, even where the patient has been very weakly, will often have a ſafe and happy termination. In theſe tedious labours, if the ſtrength of the woman be properly ſupported, every thing almoſt is to be expected from nature. Forcible means ſhould be the laſt reſource.

5thly, *Inflammatory diathesis*, in young subjects of strong rigid fibres and plethoric habits, must be obviated by venæsection, an open belly, and cooling regimen.

6thly, *Colic*.—Many women have severe attacks of this disease immediately before the labour pains come on; the reason of which is sufficiently obvious: the belly, which formerly rose so high that the fundus of the womb pressed against the pit of the stomach, afterwards subsiding, by the child's sinking to the lower part of the womb, and the oval of the head being applied to the oval of the basin, the contents of the intestines will be forced lower and lower, and the strait gut will be distended. Hence colic pains, irritation, and uneasiness, frequent desire to go to stool, or frequent loose stools, generally ensue. The best palliative remedy is to inject emollient clysters repeatedly till the bowels be entirely emptied. Although some degree of purging should attend the tenesmus, it will be necessary to wash the strait gut, by the use of one or more clysters. The irritating cause being in this way removed, an opiate, if no inflammatory heat or fever prevents, may be afterwards given with advantage.

7thly *Nauseating sickness, with vomiting*.—When these symptoms occur, warm water or chamomile-tea must be drunk freely. Sickness and vomiting happen in some degree in the easiest labours. Sometimes they proceed from a disordered state of the stomach; but in general are to be accounted for from the well-known sympathy of the womb with the stomach; and accompany the stretching of the os uteri only.

8thly, *Hectic or consumptive habit*.—It is a melancholy thing to attend a labouring woman in this state. The pains are weak and trifling; she cannot force much down; and she is feeble, and liable to faint when the pain goes off. But however apparently exhausted, the progress of labour goes on, in most cases, much better than could be well expected. The orifice of the womb gives little resistance to the force of the pains, weak and trifling as they are; the parts are soft and lax, and soon stretch in such a manner, that, if there be no fault in the pelvis, the child readily obtains a passage.

Here little is to be done but supplying the patient from time to time with light nourishment; with cordials that do not heat: and keeping up a free circulation of cool air all around her; for this purpose the curtains should be quite drawn aside, doors and windows widely opened; and she should be placed in a position with her head and breast well raised, that an easy respiration may be promoted. Hectic women, under proper management, rarely sink immediately after delivery; they generally survive a week or longer, though they seldom outlive the month.

b. Passions of the mind. Any piece of news in which the patient, her family, or relations, are interested, should be carefully

concealed, as well as every thing that tends in general to affect the passions; as labour may not only be interrupted from this cause, but the most dangerous symptoms, as floodings, convulsions, deliquia, and fatal syncope, may be induced.

c. From mismanagement in time of labour often arises debility; so that the patient's strength is exhausted, the pains at length entirely cease, and the head of the child remains locked in the pelvis, merely from want of force or pain to push it forwards. In all cases where the labour has the appearance of being tedious, the woman's patience must, as much as possible, be supported. During the grinding pains, she must be kept cool and quiet: opiates may be exhibited to pass the time, till the forcing throes ensue, when she will acquire resolution the parts will dilate kindly, and the labour end happily; whereas, if she considers herself in labour from the earliest appearance of grinding pains, she is frightened at the length of time, and her patience runs out. Slow lingering labours happen chiefly to elderly women, having a rigidity in the parts, to nervous subjects, and to such as have been weakly during pregnancy. It is of great consequence, and the advice cannot be too much inculcated, to avoid exhausting the woman's strength too much at first.

(2.) Local complaints in the parts, or their neighbourhood.

a. Narrowness or distortion of the bones of the pelvis. Where there is any material defect in this cavity, a superficial knowledge of the form and structure of the parts will enable us to judge. If, from the figure of the woman's body, there is reason to suspect a faulty pelvis; if the spine is twisted, the legs crooked, the breast-bone raised, or the chest narrow; whether the pelvis be affected or not, she will require a particular management; for the constitution of such women is weak and feeble, and they cannot be much confined to bed on account of their breathing. We can never be absolutely certain of a distortion of the pelvis (except when the distortion is confined to the inferior aperture) till the uterine orifice is considerably dilated. After this time, if the pains are strong and forcible, and the head of the child makes no advance, a narrow pelvis or large head is to be suspected. The pelvis may be faulty at the brim, bottom, or in the cavity or capacity The first of these, which most frequently occurs, is the most difficult to be discovered. The second can be readily perceived by the touch: for we can feel the defects in the shape of the os sacrum and coccyx, in the position of the ischia, and in the bending of the pubes; and where the distortion is so general, that the whole cavity of the pelvis is affected, the shape of the woman's body, the slow progress of the labour, and the state of the parts to the touch, will afford sufficient information.

In the first case, we can only know the distortion by the symptoms; for we should not attempt to introduce the hand till the

mouth of the womb be dilated: it is afterwards neceſſary; for we know that the pelvis is too ſmall, or the head too large, by its not advancing in proportion to the pains, and by feeling a ſharp ridge like a ſow's back on the top of the child's head, which is occaſioned by the bones riſing over each other in conſequence of the preſſure.

How long nature, in ſuch circumſtances, can ſupport the conflict, it is difficult to ſay. It is ſufficient to obſerve, that when things are properly prepared for the advance of the child, when the firſt ſtage of the labour is accompliſhed, but its progreſs is then ſuſpended, it is of little conſequence to the midwife whether the obſtacle is to be referred to the child or to the mother; and a man-midwife ought to be immediately called in.

If the patient's ſtrength declines; if the head, from being locked in the bones of the pelvis, begins to ſwell, and the parts of the woman to be affected with tumefaction and inflammation; nature, in this caſe, ſeems inſufficient, and it will be dangerous longer to delay the proper means of making the delivery; as mother, or child, or both, may fall a victim to our neglect. We muſt not, however, allow ourſelves to be impoſed on, either by the impatience of the diſtreſſed mother, or by the clamours of the officious impertinents about her. In affording that aſſiſtance we are able to give, we are only to be directed by the ſymptoms of the caſe: we muſt remember, that the gentleſt aſſiſtance our hands or inſtruments in laborious births can afford, is always attended with hazard and riſk; that if inſtruments be applied too early, nature will be thus interrupted in her work, and the moſt fatal conſequences may enſue; and that if aſſiſtance be delayed too long, the mother may die undelivered: we ought, however, to be informed, that the former practice of having too early recourſe to forcible means, where, in time, nature unaſſiſted might do her buſineſs, has proved by far more fatal than the latter. We ought, therefore, carefully to conſider the general hiſtory of the patient, and particular circumſtances of the caſe, that we may hit the proper time of making the delivery; which, in theſe laborious labours, is exceedingly difficult to determine; yet it is a matter of the utmoſt importance, as there is always one, often two or more lives at ſtake, and the accoucheur is accountable for the conſequences of his miſconduct or neglect.

b. The fault may be in the ſoft parts: as,

1. Dryneſs and conſtriction of the vagina. Here all ſtretching and ſcooping is to be avoided. The natural moiſture is to be ſupplied by lubricating with pomatum or butter, or by throwing up injections of warm oil; the parts are likewiſe to be relaxed by the application of warm ſtupes, or by warm ſteams directed to them.

2. Thickneſs and rigidity of the os tincæ. This happens

chiefly in women well advanced in life, where the parts open more ſlowly, and the labour generally proves more tedious. Here alſo little is to be done but waiting with patience, comforting the woman as well as poſſible, and giving an opiate from time to time. The parts may be relaxed with butter or pomatum, by throwing into the vagina injections of warm oil, or by the application of warm ſtupes to the os externum. Every forcible attempt to open or ſtretch the uterus, as ſome authors preſume to adviſe, is apt to induce inflammation and its conſequences, and to interrupt the natural pains: it is therefore univerſally the ſafeſt practice to truſt in every caſe to theſe; though tedious, or even violent, the labour for the moſt part will end more happily, and the woman recover better, than if force had been employed.

3. Polypous tumors, &c.—There is ſeldom occaſion, in caſe of cicatrices in the vagina, to dilate with the ſcalpel, to remove polypous tumors by exciſion, or to cut upon and extract a ſtone from the urethra in time of labour. But if circumſtances are urgent, ſuch expedients are ſafe and practicable, and warranted by many precedents.

4. Accumulated fæces in the inteſtines ought always to be removed by repeated emollient clyſters on the firſt appearance of approaching labour.

5. A ſtone in the urethra, if it cannot be puſhed back, muſt be cut upon and extracted, as already adviſed.

6. Prolapſus of the uterus may happen even at full time, in a pelvis too wide in all its dimenſions; for which, however, nothing can be done but to ſupport the uterus in time of a pain, that the ſtretching of the parts may be gradual. Prolapſi of the vagina and rectum muſt be reduced at the remiſſion of the pain, and a return by gentle preſſure muſt be prevented.

7. Obliquity of the uterus, though a favourite theory of ſome authors, never happens in ſuch a degree as to influence delivery, except in the caſe of a pendulous abdomen, or where it depends on the make or diſtortion of the pelvis. The firſt of theſe, though it may, by throwing the child's head over the pubes, occaſion perhaps ſome little delay, will ſeldom prove any material obſtacle to the progreſs of the labour.

II. *The protraction of labour may depend on the child, and may ariſe from,*

1ſt, the bulk or oſſification of the head.

There may be either a natural diſproportion between the head and body, or the ſwelling may be occaſioned by a putrid emphyſema in conſequence of the child's death; or the enlargement may proceed from a hydrocephalus. The firſt of theſe caſes can only be diſcovered by the ſlow progreſs of the labour, when the pains are ſtrong and frequent, the ſoft parts ſufficiently dilated, the woman in good health, and no other apparent cauſe to account

for the remora. The ſecond is diſcovered from the hiſtory of the caſe, from the common ſymptoms of a dead child, viz. the puffy emphyſematous feel of the preſenting part of the head, and from the ſeparation of the cuticle when touched. Laſtly, the hydrocephalus is diſcovered by the head falling down in the pelvis in a large bulky form, by the bones of the head being ſeparated at conſiderable diſtances, and by a fluctuation evident to the touch. On the whole, however, it may here be obſerved, that the moſt probable or ſuſpicious ſymptoms of the child's death are often deceitful.

From whatever cauſe the head is enlarged, if the difficulty ariſes from this cauſe, and the force of the pains prove inſufficient to puſh the head forwards, recourſe muſt be had to inſtruments; and if the bulk of the head is too large to paſs the diameter of the pelvis, the cranium muſt be opened to diminiſh its ſize, and the brain evacuated previous to the extraction.

2dly, The poſition of the head, which may be ſqueezed into the pelvis in ſuch a manner as not to admit of that compreſſion neceſſary for its paſſing. Such a cauſe of difficulty, however, more ſeldom occurs than many authors have imagined. The raſh and prepoſterous application of inſtruments has, in ſuch caſes, proved the bane of thouſands. Here though the labour will prove more painful and more tedious, yet nature in general, unaſſiſted, will accompliſh her own work with more ſafety to mother and child, than by the intruſion of officious hands. Turning here is always difficult, often dangerous. The ſame obſervation will hold of inſtruments, which ſhould never be employed but when alarming ſymptoms occur: the aſſertion perhaps is not more bold than true, that, in general, the moſt diſadvantageous poſition in which the head can offer is not ſufficient, without ſome other cauſe concurring, either to prevent delivery, or to endanger the life of mother or child ſo much as would be done by the movement of the gentleſt hands. Yet, in ſome caſes, where the woman is weak and exhauſted, and the pains trifling; if the head of the child be large, the bones firm, and the ſutures cloſely connected; or if there be any degree of narrowneſs in the pelvis, a difficult labour is to be expected; and the life of both mother and child will depend on a well-timed and ſkilful application of the ſurgeon's hands.

The unfavourable poſition of the head may be referred to two kinds, which include a conſiderable variety. 1. When the fontanella, or open of the head, preſents inſtead of the vertex. 2. Face caſes.

If no other obſtacle appears but the preſenting of the fontanella, the labour will by proper management generally end well; and much injury may be done by the intruſion of officious hands.

Face-caſes are the moſt difficult and laborious of all kinds of

births; and our ſucceſs in theſe will chiefly depend upon a prudent management, by carefully ſupporting the ſtrength of the woman. The varieties of face-caſes are known by the direction of the chin; for the face may preſent, 1. With the chin to the pubes; 2. To the ſacrum; 3. To either ſide. The rule in all theſe caſes is to allow the labour to go on till the face be protruded as far down as poſſible. It is often as difficult and hazardous to puſh back the child, and to bring down the crown or vertex, as to turn the child and deliver it by the feet. Sometimes a ſkilful man may ſucceed in his attempt to alter the poſition, when he has the management of the delivery from the beginning; or, in thoſe caſes where the face is conſiderably advanced in the pelvis, may be able to give aſſiſtance by paſſing a finger or two in the child's mouth, and pulling down the jaw; which leſſens the bulk of the head; or, by preſſing on the chin, to bring it under the arch of the pubes; when the crown getting into the hollow of the os ſacrum, the head will afterwards paſs eaſily.

3dly, The breadth of the ſhoulders, or their tranſverſe deſcent through the pelvis, rarely proves the cauſe of protracted labour. The head is always pretty far advanced before any obſtruction can ariſe from this cauſe; and if the head has already paſſed, in a pain or two the ſhoulders will follow. The ſame reaſoning will alſo apply with regard to the aperture of the uterus itſelf, if the head paſſes freely, in like manner will the ſhoulders; the os uteri rarely, if ever, is capable of contracting upon the neck of the child, and thus preventing the advance of the ſhoulders; and ſhould this prove the caſe, what can we do but wait with patience? After the delivery of the head, if the woman falls into deliquia, or if after ſeveral pains, the ſhoulders do not follow, and the child's life be in danger from delay, we ſhould naturally be induced to help it forward in the gentleſt manner we are able, by paſſing a finger on each ſide as far as the axilla, and thus gradually pulling it along.

III. Laſtly, *From the ſecundines, difficulty and danger ſometimes ariſe.*

1ſt, The rigidity of the membranes, and the contrary. From the firſt of theſe cauſes, the birth is ſometimes rendered tedious; but as the ſame effect is much oftener produced by the oppoſite cauſe, and the conſequences of the latter are more troubleſome and dangerous than the former, we ſhould always be exceedingly cautious of having recourſe to the common expedient of breaking the membranes, which ought never to be done till we be certain the difficulty depends upon this cauſe; and, even then, the head of the child ſhould be well advanced, and the membranes protruded almoſt as far as the os externum. Many inconveniences ariſe from a premature evacuation of the waters; for thus the parts become dry and rigid, a conſtriction of the os uteri for a

time enſues, the pains often either remit or become leſs ſtrong and forcing, though not leſs painful and fatiguing; the dilatation goes on ſo ſlow, and the labour becomes ſo ſevere, that the woman's ſtrength and ſpirits, by the unprofitable labour, are quite overcome and exhauſted; ſo that the head remains confined in the paſſage, merely from want of force of pain to puſh it forwards. The woman in the beginning of labour ſhould therefore be treated with the utmoſt delicacy and gentleneſs. The work of nature is too often ſpoiled by officious hands. She ſhould be ſeldom touched while the membranes are whole, leſt they ſhould be ruptured; and, even when touching is neceſſary, this ſhould only be done when the pains begin to remit, and the tenſe membranous bag to relax.

2dly, Too great a quantity of water may prevent the uterus from contracting, and thus weaken the force of the pains. Though this may, however, occaſion a delay, it will never be attended with more dangerous conſequences; and the ſame advice already given will hold equally good in this caſe, that the membranes ſhould never be broken till the ſoft parts be completely dilated, and we are aſſured that the difficulty or delay proceeds only from this cauſe.

3dly, The funis umbilicalis too long. The funis may be faulty from its too great length, or the contrary: thus the extraordinary length, by forming circumvolutions round the child's neck or body, ſometimes proves the cauſe of protracting the labour. But as this can only happen when the chord is of an uncommon length, there is generally enough left to admit of the exit of the child with ſafety; and it is time enough, in general, after the child is born, to ſlip the nooſe over the ſhoulders or head: there is ſeldom occaſion to divide the chord in the birth; a practice that may be attended with trouble and hazard.

The practice of introducing a finger in ano, to preſs back the coccyx, or to prevent the head, when it advances, from being retracted by circumvolutions of the chord, is now entirely laid aſide; an expedient that can anſwer no end, but that of fretting and bruiſing the parts of the mother, and injuring thoſe of the child.

Funis too ſhort. The funis is ſometimes thick and knotty, or preternaturally thickened by diſeaſe. In this caſe, part of the placenta may be ſeparated as the child advances through the pelvis, and thus a flooding will enſue; or the funis may be actually ruptured, and occaſion the death of the child, if the birth does not quickly follow. Such caſes, however, rarely happen.

An inconvenience, at leaſt fully as bad as the former, may ariſe from the too great length of the funis, though it may depend on other circumſtances, viz.

4thly, The prolapſus of the funis before the head. In this

case, the funis, if possible, should be pushed up above the presenting part; for, if the labour pains are slow, and the chord becomes cold, or the pulsation in it begins to grow languid, the circulation will thus be interrupted, and the life of the child destroyed. If the head is far advanced in the pelvis, and the child's life in danger, the delivery may be performed with the forceps: But to push up the head, and turn the child with a view to preserve its life, as many authors recommend, is a practice by no means advisable: we should seldom, in this position, be enabled to save the child; and turning under such circumstances can never be done but at the immediate hazard of losing the mother.

5thly, Placenta attached towards the cervix or os uteri. This case is truly melancholy; for, if the delivery is not speedily accomplished, the effusion from the uterine vessels will be so copious and profuse, that the unfortunate woman must in a very short time perish. On this occasion the delivery must be conducted in the best manner the judgment and skill of the operator can direct, and with as much expedition as the safety of the mother will admit.

Thus, in most laborious cases, provided the woman's strength be supported, the management properly regulated, the natural moisture of the parts when deficient supplied, manual assistance very seldom becomes requisite: but as cases do occur, wherein nature, with all advantages, will fail, and the common methods of relief prove unsuccessful, recourse must be had to more powerful means, while the woman is able to support the conflict. In all such cases, the condition of the patient, the structure and state of the parts, and position of the presenting part of the child, must very carefully be considered.

Sect. II. Cases *of* tedious *and* difficult Parturition.

That truly eminent and accurate practitioner, Dr. Smellie, has recorded the following cases of difficult labour, which, for the useful information they convey, are at least of equal value with any of modern times.

Lingering Labours arising from the Rigidity of the Membranes when pushed down with the Waters.

Case I. " I was called to a patient whose pains were pretty strong. The mouth of the womb was largely open, the head presented at the upper part of the pelvis, and, as usual, rested against the superior part of the os pubis; and during every pain, a small quantity of the waters pushed down the membranes at the back part of the pelvis. I waited to see if the child's head would advance, and though the os internum was fully open, would not

venture to break the membranes; becaufe when I attended her at the birth of her firft child, in the preceding year, the labour was lingering and tedious from the large fize of the head, even though it had advanced further, and the membranes were broke. I was therefore loth to break them, until the head fhould come lower down; and fhe continued without any fleep or reft, fubject to pretty fevere pains at the interval of five or fix minutes, till about feven in the morning, when, in fpite of all my care to prevent her being fatigued, and the encouragement of the family phyfician, who was prefent, her fpirits began to flag, fhe exclaimed fhe fhould die before delivery, and the friends feemed to be anxious and uneafy about her fituation. During all this time, the head had not advanced in the leaft, nor were the membranes with the waters further pufhed down. I introduced my finger into the vagina, and after two or three unfuccefsful attempts, burft them during a ftrong pain, by which means a large quantity of waters was difcharged, and the head forced down to the middle of the pelvis. This being effected, fhe was foon delivered of a fine child, though fmaller than the former."

CASE II. " About three in the morning, I was called by a midwife to a woman in labour of her firft child. I underftood that the pains had been ftrong and frequent, and that the friends being uneafy, recourfe was had to my advice and affiftance. I examined during a pain, and found the mouth of the womb open to about the breadth of a crown-piece, though the os uteri was pretty thick and rigid. She had been fatigued by walking, and undergoing her pains ftanding, and in various other pofitions; had enjoyed little or no reft for two nights, and was very coftive. I prefcribed an emollient and laxative clyfter, after the operation of which, I again examined during a pain, found the os internum much in the fame condition, the membranes being ftrongly pufhed down with the waters. When, upon the pains abating, the membranes became lax, I felt the child's head, which being touched by the finger, fwam up and returned: a circumftance that plainly proved there was a great quantity of waters. I affured the patient and her friends, that the child prefented fair, and that there was no apparent danger; then I advifed the midwife to put her to bed, without expofing her to any further fatigue, or defiring her to force down, except when compelled by the pains; and in cafe fhe fhould not otherwife enjoy fome reft, I prefcribed the following draught.

(No. 2.) ℞ Aq. Menth. fativ. ℥xiv.
Tinct. opii gt. xv.
Syr. papav. alb. ℥ij. Mifce.

She was directed to drink frequently of weak, warm caudle, to promote a diaphorefis. Next evening I received another call, when the midwife gave me to underftand that fhe had taken the

draught, in conſequence of which ſhe had enjoyed refreſhing reſt and a plentiful ſweat, although ſhe had been frequently waked by the pains; and ſhe told me that the membranes were not yet broke, although the mouth of the womb had been fully opened for four hours. When I examined, I found the membranes puſhed down with a large quantity of waters, to the lower part of the vagina, and when the pain abated, felt the head pretty low. It ſtill moved eaſily up and down, whence I concluded that either it was ſmall, or the pelvis not narrow: yet as this was her firſt labour, I waited two hours, in hope that the membranes would advance further, and open the os externum; but they remaining in the ſame ſituation, I imagined their rigidity retarded the delivery, and breaking them in this perſuaſion, the child was ſoon delivered."

Case III. "I was, early in the morning, called by a midwife to a woman who had been four-and-twenty hours in labour of her firſt child. I found the mouth of the womb largely open, the waters puſhing down the membranes in a large globular figure, and as the violence of the pain abated, I felt the head of the child reſting at the upper part of the os pubis. The midwife told me the patient had been in that condition ſeveral hours, but that ſhe was afraid of breaking the membranes too ſoon, becauſe ſhe ſuſpected that the woman was a little diſtorted and the pelvis narrow: however, the friends being concerned at her being ſo long in labour, and a diſcharge of blood ſupervening, ſhe had thought it neceſſary to aſk advice. After having twice again examined during pains, and maturely conſidering the caſe, I concluded that delivery was retarded by the rigidity of the membranes, which ſeemed to be thicker than uſual; for, as the child's head ſwam up from the touch and returned, it was plain that it could not be engaged, and that there was a great quantity of the waters. Though ſhe had not, to all appearance, loſt above twelve ounces of blood, yet as the diſcharge ſeemed to increaſe, I broke the membranes during the next pain, a large quantity of waters was diſcharged, and the child's head was forced more backwards, towards the upper part of the pelvis. I likewiſe felt the os internum looſe and ſoft; and as it was no longer kept on the ſtretch by the membranes and waters, ſhe became perfectly eaſy, had no pains for a long time, and the flooding entirely ceaſed. Before the membranes were broke, ſhe had felt a ſtrong propenſity to ſleep, which the pains prevented; but now I ordered her to be undreſſed, put naked in her bed, and kept quiet, that, if poſſible, ſhe might enjoy ſome natural repoſe. She accordingly reſted and was refreſhed. As for the blood ſhe had loſt, ſhe was rather benefited than injured by the diſcharge, for ſhe had for ſome weeks complained of drowſineſs, fulneſs in her eyes, with pains and giddineſs in the head, which were now removed, in-

ſomuch, that ſhe had declared herſelf much more light and eaſy. I deſired the midwife to indulge her in her repoſe, and when the pains ſhould return, to let the labour proceed in a ſlow and eaſy manner, allowing time for the head to ſtretch the vagina and external parts; and I told her, that the patient being ſtrong and healthy, nothing elſe was neceſſary, but that ſhe ſhould frequently drink weak caudle, broth or barley-water, to encourage and ſupport a plentiful perſpiration. I was afterwards informed, that ſhe ſlept ſeveral hours, and upon the return of the pains was ſafely delivered by the midwife."

CASE IV.—"I attended a gentlewoman, though not in labour of her firſt child, who ſuffered all the complaints deſcribed in the preceding caſe, except the flooding. By my advice, ſhe loſt eight ounces of blood, and was immediately relieved: but the labour being retarded by the rigidity of the membranes, though the child's head was pretty far advanced in the pelvis, they were broke, and in two or three pains after, the woman was delivered."

From the Rigidity of the Membranes when not protruded by the Waters.

CASE I.—"I was, about four o'clock in the morning, called by a midwife to a woman whom ſhe had formerly delivered with eaſe; but now ſhe had been in ſtrong labour for many hours. She ſaid, the waters had been draining off for the ſpace of three hours, and ſhe had every pain expected the delivery, which ſhe ſuppoſed was retarded by the child's being large and dead. I found the child's head about two-thirds down in the pelvis, and during every pain perceived the diſcharge of a very little water, which I at firſt miſtook for that of the uterus. But upon the ceſſation of a pain, raiſing the head a little with my finger, I obſerved a large quantity was diſcharged from the bladder; and when I felt for the hair of the ſcalp, I found the membranes ſmooth and unbroken. I again raiſed the head, that the patient might diſcharge more urine, and then the membranes ſplit. By the next pain the head was forced down to the os externum, and in a very little time the child was delivered."

CASE II.—"Soon after I attended a woman in labour of her firſt child, and could feel no waters, though the head and membranes had gradually opened the mouth of the womb, and were forced down to the middle of the pelvis; where, however, they remained near two hours. As I could inſinuate my finger all round the under part of the child's head, felt the ear at the os pubis, and diſtinguiſhed the ſutures, I concluded that the head was not large, nor the pelvis narrow; but that this delay muſt proceed from the rigidity of the membranes. Theſe, therefore, during a pain, I endeavoured to wear thin, by rubbing them with the edge of my nail, which was ſmooth and ſhort: accordingly in time of the next pain, they ſplit upon the head, which was

immediately forced down to the os externum, and this being gradually dilated, the child was delivered."

"I have been concerned in many cafes of the fame kind, where labour was retarded by the rigidity of the membranes; but as I have frequently known tedious and lingering cafes proceed from too much precipitation in breaking the membranes, I choofe rather to err a little on the other extreme, provided the patient is in no danger from weaknefs or flooding."

From the Membranes breaking too foon.

CASE I.—"My attendance was befpoke to a patient who was very fat and unwieldy. She had been taken with fome very flight pains, and the membranes breaking, a great quantity of waters was difcharged; upon which, being called in a great hurry, I found the mouth of the womb open to about the breadth of a fixpence, and thin, though rigid. She had been, five years before, delivered of a child which, followed immediately after the rupture of the membranes, and fhe now expected the fame expeditious delivery. I told her that there was a great difference between that labour and this, occafioned by the long interval, by her prefent corpulency, and the precipitate difcharge of the waters, which might render the cafe more tedious; though, as the pains were trifling, and the child prefented fair, I encouraged her to exert her patience, to banifh all anxious thoughts, and avoid all manner of fatigue; and as fhe was coftive, I prefcribed a clyfter, which had the defired effect. After this period, fhe continued three days and three nights in a lingering kind of labour, before the mouth of the womb was fufficiently dilated; fo that I was obliged to give her an opiate every evening, and direct her to referve her ftrength by lying moftly in bed. The os internum being fully opened, the pains grew ftronger, and fhe was foon delivered of a very fmall child."

CASE II.—"I was called to a poor woman, who had been two days in labour of her third child, and found the os uteri open to about the breadth of a fhilling, the lips being thick but foft; the membranes were broke, the child's head refted at the upper part of the pelvis, and the patient laboured under a loofenefs, which probably had brought on fome flight pains. She had been attended by a perfon of no education or practice in midwifery, who finding the membranes broke, imagined it was his bufinefs to promote the delivery with all poffible expedition; and with that view, fatigued the patient exceffively, by ordering her to walk about and bear down with all her force at every inconfiderable pain.

"The woman being quite exhaufted, I directed her to be put to bed and kept quiet, and leaving a gentleman and midwife,

who at that time were my pupils, I desired them to give her five grains of the pilula saponacea, and repeat the dose once or twice, if there should be occasion. By these means she was freed of pain, procured rest, and recovered her exhausted spirits. She continued easy for two days, except in time of some slight pains, which every now and then recurred, and during which a small quantity of the waters continued to be discharged; but on the third night the pains increased, the os uteri became softer, and was more and more dilated by the child's head. This advancing, plugged up the parts, so as that the dribbling of the waters ceased, and in a very little time the woman was safely delivered."

Case III.—"Soon after this occasion, I was called to a labour by a gentleman of very little experience in the practice of midwifery, who taking me aside, told me he was just going to deliver a woman whom he had attended a night and a day; and that, as his character was not established, he thought it advisable to have a person of the profession present. Indeed I was struck with his apparatus, which was very extraordinary, for his arms were rolled up with napkins, and a sheet was pinned round his middle as high as his breast. His intention was to turn the child and deliver footling; and he desired me to examine the woman, that I might satisfy the friends of the necessity he was under to take this step immediately, for the preservation of the mother and the fruit of her womb. I felt the os internum open to the breadth of a crown piece, and the head presenting, and after having fully informed myself of every circumstance necessary to be known, I concluded that the labour had been rendered tedious from the premature rupture of the membranes. I then gave the gentleman a friendly advice in private; in consequence of which he laid aside his working dress, and as the woman, who was strong, had enjoyed no rest the preceding night, an opiate was administered. She slept several hours, and was refreshed, and towards morning the pains returning, delivered the child and *secundines*. I have assisted in a number of such cases, where, by a cautious management, the parts were gradually opened, and the woman safely delivered. In many women, I have known the membranes broke several days, weeks, and even months, before labour; and provided they were not much weakened, they have been delivered with ease. In my practice this case has chiefly prevailed among fat women, and may perhaps be owing to laxity."

Case IV.—"An accoucheur was called to a woman in labour, near Norwich. The waters had been draining off for two days, during which she had enjoyed no rest. She was very weak and low spirited, had violent reachings, with a singultus; and when he examined, he found the child's head presenting. He directed her to be put to bed, prescribed an anodyne draught, in consequence of which she had a refreshing sleep of two or three

hours; then the pains, which were weak before, grew ſtrong and more frequent, and the woman was ſafely brought to bed.

"He ſaid, he could have delivered with the forceps, but followed my advice, which was, never to uſe them but when they are abſolutely neceſſary. The ſame method he has ſucceſsfully uſed upon ſeveral occaſions."

Case V.—"I was called to a patient in labour of her firſt child. The membranes broke in the evening, and ſhe had frequent pains all night, but would not allow me to examine till about eight o'clock next morning, when I found the child's head reſting above the pubis, and the os uteri ſoft and lying looſe, as if it had been pretty largely opened before the membranes broke; but the vagina was very ſtrait, as well as the os externum. She enjoyed no reſt all night, the pains grew exceſſively ſtrong and frequent, and the child's head had not advanced in the leaſt. Being apprehenſive, from her violent complaints of the abdomen, that the uterus would burſt by ſuch ſtrong efforts, I preſcribed a paregoric draught to allay the violence of the pain and procure ſleep. As ſhe had been uſed to take opiates, the doſe amounted to thirty drops of the tinct. opii, with ʒij. of ſyr. de meconio, and ſome ſimple cinnamon water. This preſcription had the deſired effect: ſhe ſlept ſeveral hours, though every now and then her ſleep was interrupted by a ſtrong pain. About twelve that night, when the effect of the opiate was worn off, her violent pains recurring, I was allowed to examine again, and finding the head ſtill in the ſame ſituation, the draught was repeated. This kept her tolerably eaſy till eight in the morning, when the pains returning it was again adminiſtered: for the ſame reaſon it was repeated at ſix in the evening, and four in the morning. About eight, I was permitted to examine the third time, when I felt the head pitched down in a lengthened form to the middle of the pelvis; but the lower part of the vagina was ſtill very narrow, as well as the os externum, and time was required for dilating both, and for puſhing down and elongating the head, which was large. At the beginning of labour ſhe had ſome looſe ſtools, but made no water for three nights and two days; ſo that when the effect of the opiate ceaſed, the diſtenſion of the bladder aggravated the agony of her ſufferings; yet no perſuaſions would induce her to let me draw off the urine, and I was again obliged to repeat the opiate. Her ſtrong pains, which every now and then recurred, ſhe endeavoured to ſuppreſs, leſt I ſhould deſire to examine; and would allow nobody to be with her but the nurſe. At length, I was in the evening ſuddenly called from another apartment, and finding the head almoſt delivered, I had juſt time to prevent the laceration of the external parts. I felt a languid motion in the veſſels of the funis; but could not, by all the uſual methods, bring the child to breathe. I brought away the pla-

centa, found the uterus in a right ſtate, and immediately drew off a large quantity of urine with the catheter. Nevertheleſs, I was obliged to repeat the draught four or five times in four-and-twenty hours, becauſe ſhe could neither reſt nor ſweat without it, her pulſe flagged, and her ſpirits ſunk, and no other cordials had the leaſt effect. After delivery, her urine was obſtructed for three days, and for eight weeks afterwards ſhe loſt the power of retention, which, however, returned with her ſtrength. As for the child, it was probably loſt by her timorous diſpoſition; in conſequence of which ſhe refuſed all aſſiſtance at the latter end of labour."

Lingering and tedious Labours, from the Forehead's being prevented from turning backwards into the lower and concave part of the Sacrum.

CASE I. "I was called to a woman who had been long in labour of her firſt child, and was naturally of a weak and delicate conſtitution. On that account the midwife told me, ſhe had kept her moſtly in bed, and done nothing to fatigue her. She ſaid the labour had gone on very well, though the pains were ſlight and at long intervals; and that ſince the diſcharge of the waters, the child's head had advanced ſlowly to the external parts, where it had ſtopped for a conſiderable time. This account I found true, upon examination. A clyſter had been adminiſtered with good effect, and the patient had enjoyed a good deal of ſleep between the pains; but finding her pulſe rather too weak and languid, I directed her to take two ſpoonfuls of the following mixture every half hour.

(No. 3.) ℞ Aq. cinnam. ℥ivß.
Spirit: cinnam. ℥i.
Ammon. præp. ℈ß.
Conf. aromat. ℈i.
Syr. ſimp. ℥ß. Miſce.

"I attended ſome time without perceiving that the head advanced to open the os externum. I felt one of the ears at the os pubis, the lambdoidal croſſing the end of the ſagittal ſuture at the lower part of the right os iſchium, and the fontanelle on the oppoſite ſide at the upper part of the left. I perceived that the pains had not force enough to move the occiput from the right iſchium, ſo as to paſs under the os pubis, and the forehead from the oppoſite ſide to the hollow of the os ſacrum. I therefore, during the next pain, introduced my fingers towards the child's left temple, and turned the forehead backwards to the os ſacrum. The narrow part of the head being now towards the ſides and lower part of the pelvis, the vertex immediately advanced forwards, gradually opening the os externum during every pain; and the wo-

man being safely delivered, the placenta separated slowly, and was discharged in about half an hour."

CASE II. " I was called to a woman in labour of her first child, and found the midwife and another male practitioner in waiting. This last gave me to understand, that when he came, the patient had been a long time in strong labour; that after the mouth of the womb was sufficiently opened, the membranes had broke, and the pains gone off for some time, though they returned with greater violence, and forced down the head to the lower part of the pelvis, beyond which situation it had not advanced in a whole hour; that he had attempted to deliver it with a lack or fillet, which he had procured as a great secret, but the head being large, he could not fix it properly, neither could he, after repeated trials, bring the child by the feet; so that he concluded there was an absolute necessity for opening the head. Upon examination, I found the head in the same position as that described in the preceding case, or rather higher in the pelvis. The pains were tolerably strong, the woman's pulse was much more quick than is usual even in time of pains. She complained of a violent head-ach, laboured under great drought, and her skin was very hot and dry. Of these complaints, however, she was relieved by losing ten ounces of blood from her arm. I told the gentleman, that as the patient was strong, and the pains continued, we ought to wait the efforts of nature, without using either forceps or fillet, which I never applied, except to assist nature when she was too weak. When I examined again, I found the head lower down, and moved the forehead backwards towards the os sacrum; so that the crown of the head advancing, opened the os externum, and the patient was soon delivered of a child of an extraordinary size. But the fillet having galled and torn part of the hairy scalp from the occiput, was the occasion of a violent inflammation, of which the child died in a few days. The mother, however, recovered tolerably well, and since that time has had pretty easy labours."

CASE III. " I was called by a midwife to a very fat woman, near the age of forty, in labour of her first child. The membranes had been long broke before I came, and I understood that the friends being uneasy, had sent for a gentleman of the profession, who, in attempting to deliver the patient, said he had broke his instrument, and went home in order to fetch another: but, instead of returning, he sent a message, importing that he was obliged to go and attend another woman. Her pains being strong, the os externum and lower part of the vagina were gently dilated, and the forehead being moved backwards at the same time, the head advanced, and the woman was delivered in about half an hour after I arrived.

" There was a very small opening through one of the parietal

bones of the child's ſkull, yet none of the cerebrum was evacuated, though a great deal of blood was diſcharged, notwithſtanding the application of proper compreſſes, and the poor child died moaning, in five or ſix hours after its birth."

CASE IV. "In the courſe of the ſame year, I was called by a gentleman who had formerly attended me for a ſhort time, in behalf of a woman whom he had attempted to deliver with the forceps. He ſaid, he was ſure they had been properly applied, that he had pulled with great force without being able to move the child's head, and that the woman was in ſuch imminent danger, he did not believe ſhe could live until we ſhould reach the houſe. Notwithſtanding this declaration, I found her pulſe ſtrong and good, as well as the pains, and that not above one third part of the head had come down into the pelvis. I likewiſe underſtood ſhe was uſed to have tedious labours, proceeding, in all probability, from the ſmall ſize of the pelvis. I privately convinced the gentleman of his error, obſerving, that as the pains were good, no force ought to be applied; that the forceps would never ſucceed, except when the head was come lower down, and even then ought not to be uſed, unleſs the woman was in danger from weakneſs and want of labour pains. We preſcribed a mixture to amuſe the patient, and in about five hours ſhe was ſafely delivered."

From the Vertex preſenting, though low in the Pelvis, the Forehead being towards the Os Pubis.

CASE I. "I was called by a midwife to a woman whom ſhe had attended near two days, and whoſe former labours had been very eaſy: from which circumſtance ſhe inferred, that in this caſe the child was of an extraordinary ſize. I found the fontanelle towards the left groin, and the lambdoidal croſſing the ſagittal future at the right ſide of the os coccygis. The os externum I gently opened during every pain, raiſing the head a little when the pain began to abate, and moving the forehead to the left ſide of the os ſacrum. As the next pain increaſed, I withdrew my hand, which was followed by the child's head, and the woman was in a little time delivered."

CASE II. "I attended a gentlewoman who had been eaſy in her former labours. When I was called, the membranes were broke, and the mouth of the womb was largely open; though the head advanced very ſlowly. At length, feeling the vertex at the lower part of the coccyx, and the fontanelle below the pubis, I attempted, but to no purpoſe, to raiſe the head, and move the forehead to the right ſide of the pelvis. Yet, when I withdrew my hand, the head was forced lower down by a ſtrong pain, the vertex protruded the perinæum and poſterior parts, in form of a large tumor, the forehead, face, and chin, turned immediately out

from below the pubis, and the vertex was raiſed upwards, with an half round turn, from the perinæum and poſterior parts. The child was ſmall, and cried as ſoon as the head was delivered, even before the body was extracted."

From the Preſentation of the Fontanelle.

Dr. Smellie was often concerned in caſes where the fontanelle preſented. He ſays, they commonly proved tedious and lingering, though the delivery was generally effected by the labour-pains, and the child's head ſometimes appeared in form of a ſow's back; a circumſtance, in all probability, owing to the preſſure it ſuſtained in the pelvis, while it advanced in that unuſual way. Sometimes in theſe lingering labours, by raiſing up the forehead with his fingers, he altered the poſition, ſo as to let the vertex ſink lower down, particularly in the following inſtance:

CASE I. "I attended," ſays he, "a gentlewoman, whom I had formerly three times delivered, and ſhe had eaſy labours. The os uteri was now fully open, and the membranes broke ſoon after I arrived. Yet the head did not advance as uſual, but reſted at the upper part of the pelvis. As ſhe had been long fatigued with ſevere and fruitleſs pains, I examined the poſition of the head more narrowly, and plainly perceived the fontanelle preſenting in the middle; but I could not certainly diſcover how the forehead lay, until I had gradually opened the os externum during the pains. I then found that the vertex was to the left ſide, and the forehead with the face to the oppoſite part. As ſhe lay in bed, upon her left ſide, I could not ſo eaſily aſſiſt in that poſition: ſhe was therefore turned on her back, her head and ſhoulders being raiſed a little with pillows, and her knees held up towards her belly, as ſhe lay acroſs the bed; for her pains were alſo ſtronger while ſhe continued in this poſture. In the beginning of a pain, I gently introduced my right hand into the vagina, and raiſed up the forehead and face; as the pain increaſed, I withdrew my hand, and found the vertex ſink down to the lower part of the left iſchium. In a few pains, the forehead turned backwards, the hind head came out below the pubis, the os externum was gradually opened, and the child ſafely delivered."

From the Preſentation of the Forehead.

CASE I. "I was called to a woman in labour, by the friends, who were uneaſy at the lingering caſe, and imagined the midwife kept her in hand, becauſe ſhe had been ſeveral times delivered by another midwife, and her labours were eaſy. I was informed that the os uteri was fully opened, and the membranes had been broke ſeveral hours; that the child preſented fair, and the pains were ſtrong, yet the head had advanced very little, though ſince I had been ſent for, the child had deſcended conſiderably lower

in the pelvis. Upon examining in time of a pain, I really imagined the vertex presented, and thought I felt the fontanelle to the side, as in other cases; but when the head advanced, in consequence of the succeeding pains, and protruded the perinæum and posterior parts, I felt the eyes and nose on the contrary side, towards the lower part of the os ischium. In another pain or two, the os externum being sufficiently dilated, the face turned in below the os pubis, over which the chin turned upwards; the fontanelle, vertex, and hind-head, were raised, and came out with a semicircular turn from the perinæum and parts below, and the body was delivered by the same pain.

"The child was small and dead; its forehead was raised up in form of a sugar-loaf, the vertex being pressed flat, and the face and hairy scalp very much swelled.

"The mother, for several days after delivery, complained of great pain in her back and at the pubis, which seemed to proceed from an over-straining of the ligaments at the juncture of the bones; but by lying quiet, and drinking plentifully of warm and weak diluting fluids, she fell into profuse sweats, and soon was freed of these complaints."

CASE II. "In the following year I assisted in a similar case, where the head was high up, and had long rested at the brim of the pelvis. At first, I thought it presented fair, but as it did not advance for several hours, notwithstanding the strong pains, and I was told, that the patient had been delivered of her second and third child before the midwife could reach the house, I concluded that the head did not present in the common way, and introduced my hand slowly into the vagina, as she lay on her left side. Finding the forehead presenting with the face to the right ilium, I pushed it up to that side, and as I withdrew my hand a little, still pressed it up with my fingers, that it might not return before the next pain, which forced down the vertex from the opposite side; then the head descended gradually, and the woman was delivered in a few pains."

From the Presentation of the Ears.

Dr. Smellie records a few cases in which the ear presented. When the child was not large, he says, the pains commonly altered the position, by forcing down the vertex, and the patient was easily delivered. This was commonly the case too, when the fontanelle presented; but when the head was large, the labour was more tedious and lingering, upon which occasion he usually pushed up the head so as that the vertex might advance, particularly in the following instance:

CASE I. "Being called by a midwife," says he, "to a woman who had been long in labour, I introduced my hand into the vagina, and finding the ear presenting, could perceive, when I raised

the head, neck, and ſhoulder, to the back part of the uterus, lay over the pubis, the face being to the right ſide. As all the waters were diſcharged, it would have required great force to turn the child ſo as to bring it by the feet; I therefore raiſed the head higher, forcing the forehead upwards, and the vertex coming in as I withdrew my hand, the child was preſently delivered."

From the Preſentation of the Face, of the Shoulder, and of the Breaſt.

CASE I. "Being called to a woman, who had been a great many hours in labour, after the mouth of the womb was fully opened, and the waters diſcharged, I found the head low down in the pelvis, the face preſenting the chin at the lower part of the pubis, and the cheeks ſo exceſſively ſwelled, that at firſt I imagined the breech preſented, until examining a ſecond time with my fingers, I felt the mouth, eyes, and noſe. When the friends aſked if the caſe was dangerous, I precipitately anſwered, that there was no great danger, but that of loſing the child, which might be ſaved, if the mother was ſoon delivered. They replied, that provided the mother was ſafe, the child was of no great conſequence, as ſhe had already more children than ſhe could well maintain. The patient told me ſhe felt the child ſtir every now and then, and indeed I plainly felt its motion by laying my hand on her belly. However, as every body preſent declared againſt my giving any aſſiſtance, and were ſatisfied with my telling them that the woman was in no immediate danger, I left her to the care of the midwife, who indeed had oppoſed my being called. I could eaſily have delivered her with the forceps, and ought to have ſaid in general that there was danger in the caſe. I knew the child's head was ſmall, and that the delivery was retarded either by the navel-ſtring, or the contraction of the lower part of the uterus, round the neck, or before the ſhoulders; for the head was pulled up as the pains abated.

"This viſit I made in the forenoon, and the child was not delivered till the evening, when I was called again in a great hurry to bring away the placenta, which was eaſily extracted. I examined the child, which was dead, and found its head ſqueezed to a great length, the face and neck being much ſwelled and of a livid colour."

CASE II. "I examined one of the poor women, attended by my pupils, in labour of her firſt child, which lay very high, and I thought I felt the breech preſenting. The membranes had broke when the mouth of the womb was dilated to the breadth of half-a-crown. The pains being ſlight and the woman ſtrong, I deſired the gentleman to let the breech be puſhed down gradually, and ſlowly dilate the os internum, and in the mean time I left a midwife to attend, and directed her to give us notice

when the dilatation ſhould be effected. In about three hours I was called again, and underſtood from the midwife, that after the mouth of the womb was fully opened, the child deſcended very faſt, preſenting at firſt with the cheek, but that now ſhe plainly diſtinguiſhed the face. When I examined, I found the chin down to the lower part of the left iſchium, and turned up below the pubis. In a few pains, the os externum being ſufficiently dilated, the forehead and vertex turned up from the perinæum, and the woman was immediately delivered of a ſmall child, before any of the pupils arrived."

CASE III. "I was called to a woman in labour, by a midwife, who told me ſhe found the opening of the child's head below the ſhare-bones, and imagined the child came wrong, with the forehead to that part. At firſt when I examined I was of the ſame opinion; but during the next pain, which was very ſtrong, I found the head was puſhed down much lower at the back part of the pelvis. Feeling at that part with my finger, for the lambdoidal ſuture, I plainly diſtinguiſhed the face, and the chin backwards at the coccyx. In two pains more, the face and forehead protruded the poſterior parts in the form of a large tumor, the perinæum and fundament were greatly lengthened, the vertex and occiput ſlipped out from below the pubis; then the forehead and face turned up from the perinæum, which being thin, I ſupported it with my hand, and the woman was delivered of a ſmall child. Her pelvis was large, and ſhe uſed to have very quick labours."

CASE IV.—"I attended a gentlewoman, whom I had twice before delivered, after tedious labours, proceeding from the largeneſs of the children and the ſmall ſize of the pelvis. When I was called on this third occaſion, the mouth of the womb was open to about the breadth of a crown-piece, the membranes and waters were very tenſe during a pain, but being relaxed when that abated, I felt ſome part of the child, though more unequal than the apex of the head. Having waited, till by degrees the membranes had fully opened the parts, and were puſhed down to the lower part of the vagina, I examined again, and felt the child's face preſenting through the membranes. Reflecting upon her former tedious labours, and foreſeeing that if I allowed the head to come along in that poſition, the patient would ſuffer, and that if I ſhould bring it by the feet, the child might be loſt; I directed her to be laid on her back, with her breech to the foot of the bed, and ſupported with pillows, between a ſitting and a lying poſture, on pretence that the labour would be favoured by ſuch a ſituation. While a woman ſat behind ſupporting her head, and one on each ſide held up her legs and knees, I gradually dilated the os externum during the pains, until I could introduce my hand into the vagina. In puſhing it farther up, I felt the membranes break, but my hand ſtill advancing, the os externum was plugged up

by the lower part of my arm, which hindered the waters from being difcharged, until feeling the chin to the right, and the forehead to the left fide, I raifed this laft upwards, grafping the vertex, which was now lowermoft, with my fingers and thumb. I then gently withdrew my hand a little, to let the waters pafs, that the uterus might be contracted, and keep the child in that pofition. Finding this expedient fucceed, I drew forth my hand, when the patient thought the child was delivered. However, I convinced her that what I had done was abfolutely neceffary, and that fhe was now in a fair way of delivery, provided fhe would exert that courage and patience which had fupported her in her former labours. Nor was I difappointed in my prognoftic; for this delivery was much quicker than thofe fhe had experienced before."

CASE V.—"I was called to a woman in labour, by a midwife who had formerly attended my lectures: fhe informed me that the mouth of the womb was largely open, and although the membranes were not broke, fhe could find fomething like a hand and fingers: fhe likewife told me, that the woman was ftrait made; that fhe had delivered her once before, when the labour was very tedious, and the head of the child, which was dead born, fqueezed to a great length. I found every thing as fhe had defcribed, and felt befides, fomething like the fhoulder or hip, which I was certain could not be the head. As her former labours had been difficult, and I was afraid the child would be loft, fhould it be brought by the feet, I refolved to feize the opportunity of trying to bring in the head, fince the membranes were not broke. I accordingly acted pretty much in the fame manner as in the preceding cafe; but found greater difficulty in bringing in the head, which was more flippery and large than in the former inftance: befides, I loft a great quantity of the waters, by being obliged, after I had pufhed up the fhoulder, to withdraw my hand a good way before I could bring in the head, and in attempting to raife up the hand that came down with it. The vertex being turned down, and one of the ears towards the vertebræ of the loins, I withdrew my hand, when the forehead with the right-hand was to the right, and the occiput to the left fide of the pelvis, and the pains ceafed for fome time, as ufual, after the membranes are broke. Having now encouraged the woman, by telling her that the child prefented fair, I took my leave, and in about three hours, fhe was fafely delivered, though not without very ftrong and fevere pains."

CASE VI.—"I was called to a woman, whom I had before delivered of a child that prefented wrong, though I could not fave it by reafon of her narrow pelvis. On this occafion, fhe had been fubject to frequent, though flight pains, the day before I faw her; towards morning the membranes had broke, a fmall quantity of the waters was difcharged, and fhe had no more pains till my arrival. Upon examining, I found fome part prefenting, which could nei-

ther be the head nor breech, and I afterwards discovered to be the breast. As the pains had ceased, I was in hopes that some of the waters was left in the uterus, although the membranes were broke; and going to work as in the two former cases, brought in the vertex, with great difficulty, occasioned by the slipperin ss of the body and head, which last, was, after many efforts, and the return of strong pains, squeezed down in a longitudinal form, and the woman safely delivered."

In these cases the scientific accoucheur is seldom called in by the midwives before the membranes are broke, otherwise in præternatural positions, a better opportunity would offer to bring in the vertex, when the pelvis is so small, or the head so large, that the child cannot be saved, if brought by the feet.

Case VII.—In this case, which occurred at Chatham, the accoucheur was not called till the waters had been discharged several hours; and he found the face presenting lower in the pelvis, the chin being towards the right ischium. After the woman had undergone several pains, which did no service, he resolved to deliver with the forceps; but just when he was about to apply them, she was seized with a strong pain, during which he assisted with his fingers in moving the chin towards the pubis, and the child was safely delivered.

Case VIII.—"In this case," says the writer, "I examined the woman, and felt the child's face presenting. I understood that she had undergone two tedious labours before, though the children were very small; whence I concluded her pelvis was narrow, and in passing my hand into the vagina, I found it so. Upon which I laid aside all thoughts of turning the child, and delivering by the feet, as I should have done had the pelvis been large. The face being high up, and her pains very strong, I waited to see if they would bring it lower down; and in about six hours my expectation was answered, the chin being at the left ischium. I then, during the pains, endeavoured to raise it to the os pubis with my finger, and in that manner the child was delivered. The head was squeezed into a long form, the parietal bones were pressed one over another, and on one side of the head was a very deep impression formed by the jetting in of the os sacrum. The face was very much bruised and swelled, and the child dead. I prescribed an opiate for the woman, who had undergone great fatigue; she enjoyed good rest and did well."

Tedious Labour from the Rigidity of the Os Uteri.

Case I.—"I was called to a woman turned of forty, in labour of her first child, who, though by her own and midwife's account, she had three or four weeks to go, had been in a kind of lingering labour for two days. At six in the evening the membranes broke, and as she lived at a distance, I could not be with her, till about

four next morning, when the midwife told me that after the membranes broke, ſhe had every now and then a ſtrong pain, but that the mouth of the womb was not opened as uſual by theſe pains, and ſhe was afraid that the womb altogether would be puſhed out of the body, through the os externum. Upon examining in time of a pain, I found the mouth of the womb open to about the breadth of half a crown, but thick and rigid, and forced about half an inch without the os externum, which was pretty much dilated, and I felt the child's head preſenting. There was an intenſe heat at the mouth of the uterus, and ſhe complained of great pain in that part, even in the abſence of the labour-pains. She was of a ſtrong and healthy conſtitution, though of a thin habit; her pulſe was quick, full and hard, her ſkin hot and dry: ſhe laboured under a ſevere drought, and I underſtood ſhe had from time to time ſwallowed cordials to aſſiſt the labour, ſuch as white-wine and malt ſpirit. Having conſidered the circumſtances of the caſe, I concluded that the difficulty of delivery was owing to the rigidity of the os internum, for ſhe had lain chiefly on the bed, without having been fatigued; that the head was but ſmall, becauſe it had puſhed the mouth of the womb ſo low down, and that the fever was owing to an indiſcreet uſe of ſpirituous liquors. In conſequence of theſe reflections ſhe was blooded at the arm to the quantity of twelve ounces, directed to drink plentifully of barley-water, kept in bed, lying on one ſide, her breech being raiſed a little higher than her body, and, during every pain I kept up the uterus and head with my fingers, ſo as to reſiſt and abate the violent force of the pains. By theſe means, ſhe was greatly relieved, enjoyed between whiles gentle ſlumbers and plentiful ſweats: the mouth of the womb became more ſoft and yielding, and when largely dilated, I puſhed it gently up with my fingers all round the head, which at laſt glided eaſily along, and was delivered. I took the ſame precaution in delivering the ſhoulders and body, deſired the midwife to confine her to her bed longer than the uſual time, and adviſed her to abſtain from any violent exerciſe for a conſiderable time after ſhe ſhould be able to walk, in order to prevent a prolapſus uteri. I was afterwards informed that ſhe recovered very well, without being expoſed to any ſuch complaints in the ſequel."

CASE II. "I attended a patient near forty, in labour of her third child, who had been afflicted with a prolapſus uteri, ſince her laſt pregnancy. When I was called, ſhe had ſome ſlight pains, the mouth of the womb was very little open, ſeemed thin and rigid, and was ſituated more forwards in the vagina, than is commonly the caſe; the child's head was preſſed low down, and ſeemed ſmall, but I could feel no waters. Her pulſe being very quick, ſhe was blooded to the quantity of eight ounces, and an emollient and laxative clyſter being injected, diſcharged a great quantity of hard fæces; and as ſhe had enjoyed no ſleep that day or the preceding

night, I prescribed an anodyne draught, and directed her to drink plentifully of barley-water. These expedients succeeded to my wish; she slept and sweated during the greatest part of the night, and I was called again in the morning, when the pains grew stronger and more frequent. I then found the mouth of the womb much more open, though pushed down without the os externum; I likewise felt between my fingers the hair of the child's head, though the patient was not sensible that the membranes were broke, or the waters drained off. During every pain, I kept up the child's head, and the mouth of the womb, which I gradually dilated with my finger, till being fully opened, it easily slipt up all round the head, and this afterwards opening the os externum by degrees, was safely delivered."

CASE III. "In the course of the same year, I was bespoke to attend a woman, who had been subject to tedious labours. When called, I found the child's head pushed down to the anterior part of the uterus, so much at the fore-part, that it was some time before I could feel the mouth of the womb, which was tilted backwards and upwards to the upper part of the os sacrum. In a few pains, the head pushed down the uterus below the pubis, to the os externum, when I felt the os uteri very thin and soft; and the patient complained of great pain from this protrusion of the lower part of the womb by the head. However, she was in a great measure relieved by my pressing against it with my fingers. At the same time, introducing the fore-finger of my other hand into the mouth of the womb, I brought it forwards to the pubis, and kept it in that position during several pains, which gradually dilating it, the head was pushed lower and lower, and by degrees I slipt up the mouth of the womb, betwixt the pubis and head, which afterwards made very quick advances, and was soon delivered."

CASE IV. "I attended a woman in labour of her first child, whose belly was pendulous, and hung forward over the pubis. When I came she was pretty strait laced, the pains were strong, the membranes pushed down with the waters, the os internum was backwards and high up, felt thick and rigid, and was opened to about the breadth of half a crown. I directed her to unlace, desired the nurse to make the bed so as that her breech might lie higher than her shoulder, and to raise up the belly with her hands in time of a pain. The mouth of the womb was gradually dilated, the membranes broke, and the child's head advanced lower in the pelvis: but the os internum remaining still backwards, and the head pressing down the lower and anterior part of the uterus, I was obliged to assist, as in the former case, until the head was forced down, though it dilated with great difficulty, and to stretch the os externum, from time to time, before the child could be delivered."

CASE V—"I was called to a patient not above fifteen years

of age, in labour of her firſt child, and found the head of the child preſenting, and that the membranes and waters, after having ſlowly dilated the os internum, advanced quite to the os externum, which I hoped they would open alſo; but they broke juſt as they arrived at the part. Then the head advanced and puſhed out the lower parts, in form of a large tumor, the perinæum being very thin, and ſtretched to the extent of five fingers. Nevertheleſs the os externum was very little dilated, and the pains were ſo ſtrong, that I was obliged to preſs the flat part of my hand upon the parts, to prevent the fourchette from being torn, and by reſiſting the force of the head againſt the os externum, allow it time for gradual relaxation. The pains continuing to return every five or ſix minutes for the ſpace of an hour, without any alteration, I found it neceſſary to preſcribe an opiate to reſtrain them, that I might have time to lubricate with pomatum, and dilate gently with my fingers. By theſe means the os externum was gradually ſtretched ſo as to allow the head to paſs without any laceration of the parts."

CASE VI.—"About the ſame time, I attended another patient, though not ſo young, and the labour proceeded much in the ſame manner: but after having guarded the parts, in order to prevent laceration, during a few pains, I withdrew my hand to take ſome pomatum, for lubricating the external parts. In that interval a ſtrong pain returned, contrary to my expectation; and, before I could replace my hand, the child's head was delivered, and the perinæum torn quite to the anus. This accident was owing to my hurry and precipitation, in conſequence of which I paſſed my hand on the outſide of the ſheet, and before I could diſentangle it, the damage was done."

Ever after this misfortune, when Dr. Smellie attended women in labour of their firſt children, he always turned up and pinned the upper ſheet to the bed-quilt, as the child's head advanced to the lower part of the pelvis.

CASE VII.—Dr. Auſtin, of Edinburgh, was called to a young woman in labour of her firſt child, who had acute pains from Tueſday till Saturday night, when ſhe was delivered. All that time the child's head was ſqueezed in the pelvis, and for twenty-four hours the bones rode one another in the vagina. About two hours before ſhe was laid, he attempted to introduce the forceps, which, however, he declined uſing, becauſe the pains became ſtronger, and he imagined the child was dead. Indeed, to all appearance it was ſtill-born, but in a few minutes he was agreeably ſurpriſed to find it alive, and both the mother and the child did well. Two days after delivery, he extracted from the woman five Engliſh pints of urine with the catheter.

Lingering Parturition from Weakneſs.

CASE I.—"I was called to one of the poor women whom my

pupils attended, in labour of her firſt child. She was young, and ſo exceſſively weak from want of nouriſhment, that when we were called, ſhe ſeemed really expiring. Another patient who lived in the ſame houſe, ſaid, this young woman was an entire ſtranger, who had been taken in as a lodger the preceding night, and ſeemed to be in a ſtarving condition; and at laſt the poor creature herſelf owned, that ſhe had received no ſuſtenance but water, for the ſpace of three days. She had been ſubject to ſome ſlight pains all the former day and night: when I examined, I found the mouth of the womb largely open, the membranes broken, and the head preſenting; but the pains were at long intervals, and her weakneſs ſo alarming, that I immediately ſent for a roll and ſome ale, which was qualified with a little ſugar, nutmeg, and geneva, to which laſt I ſuppoſed ſhe was accuſtomed, and therefore judged it was a better cordial than any other I could have preſcribed from an apothecary's ſhop. Of this nouriſhment I directed her to take a very little at a time, and accordingly her exhauſted ſpirits were gradually recruited, inſomuch, that although the caſe was lingering and tedious, ſhe was ſafely delivered by the labour-pains."

CASE II.—"I was, by a midwife, called to a woman of a weak habit and melancholy diſpoſition, occaſioned by the exceſſive flooding which had attended a former delivery. She had become pregnant again, before ſhe recovered her ſtrength, was ſeldom able to riſe out of bed, and her ſtomach was ſo weak, that it could receive or digeſt but very little nouriſhment. The midwife told me her pains were ſo weak, ſhe was afraid ſhe could not be delivered without aſſiſtance; that ſhe had enjoyed little or no ſleep for the ſpace of forty-eight hours, but had been ſubject to frequent faintings, from which ſhe was with difficulty recovered; and laſtly, that the mouth of the womb was ſoft and a little open. I felt her pulſe very low, and examining during a pain, which feebly protruded the membranes and waters, perceived the child's head: then bringing forwards with my finger the os uteri towards the pubis, I found it much more open than the midwife imagined, and felt ſome indurated fæces in the rectum. I was alſo informed, that as ſhe had an averſion to all ſorts of nouriſhment, ſhe ate very little, and ſeldom had paſſage in her belly, and was commonly coſtive.

"I directed her to take frequently a teacupful of chicken-broth, and between whiles a little of the weak cinnamon-water. A clyſter of the broth being thrown up, emptied the inteſtines; then half a pint of the ſame, in which two grains of opium were diſſolved, being injected, I deſired that ſhe might be kept quiet in bed, in hope of procuring her ſleep, and take an ounce of ſtrong cinnamon-water every four hours. By theſe means the faintings went off, ſhe ſlept pretty well that night between the pains, and theſe gradually increaſing, ſhe was ſafely delivered in the morning."

CASE III.—"I attended a gentlewoman, in labour of her third child. She was of an hypochondriac difpofition, went feldom abroad, towards the latter end of pregnancy, could hardly be kept out of bed, was, in the beginning of the eighth month, attacked with frequent reachings, fo as to vomit up every thing fhe ate or drank, by which complaint fhe was reduced to a ftate of exceffive weaknefs, from want of nourifhment.

"I ordered the nurfe to inject about half a pint of beef or mutton broth, by way of clyfter, five or fix times a-day, to prevail upon her to rife frequently and walk about the room, and likewife to go abroad fometimes in a coach.

"By this method fhe recruited a little, and with the affiftance of fome mint and aromatic waters, fhe could keep a little broth in her ftomach. I managed her much in the fame manner as that defcribed in the former cafe, in time of labour, which, though tedious, ended happily."

From Anxiety and Grief.

CASE I.—"I attended a gentlewoman, in labour of her firft child, who, a few days before, had been fo much affected with the fudden death of her hufband, that fhe was feized with frequent faintings and great anxiety of mind. When I arrived, her pains were very weak, and the membranes had broke even before the mouth of the womb was much dilated. Although the child's head was fmall, fhe continued three days in a kind of labour: yet, by encouraging and fupporting her with cordials and nourifhing things, and indulging her as much as poffible with reft, fhe was fafely delivered of a child, which feemed to have died foon after fhe heard the melancholy news of her hufband's death."

CASE II.—"I was called to another gentlewoman, in the fame circumftances, overwhelmed with anxiety in confequence of her hufband's death, which had happened about two months before her labour. I found her fo low, and the cafe was fo tedious, that I was afraid fhe had not ftrength to undergo the delivery. Yet by the management defcribed above, fhe was fafely delivered of a weakly child."

Dr. Smellie obferves that he has attended many other women in labour, whofe lives were endangered by great weaknefs, proceeding from various caufes; yet, by fuch management they were fafely delivered, Anxiety, misfortune, and difappointment, frequently reduce women in labour, to the verge of death. Labour is often brought on by frights proceeding from different accidents, fuch as that of fire in the neighbourhood. The earthquake in the year 1749, produced feveral cafes of this kind; and any thing that affects the paffions to a degree of violence or tranfport, will have the fame effect. On thefe occafions, if the child is fmall, delivery is fome-

times performed of a ſudden; but if the labour was begun before the patient was ſeized with the emotion, it commonly went off, nor did the pains return for a long time. However, if theſe frights, &c. were not attended with violent floodings, convulſions, or fevers, the doctor found his patients generally recover, though ſometimes the children were born dead. Yet even when thoſe bad ſymptoms have accompanied the caſe, he ſays he has known both mother and child happily preſerved.

From Floodings.

CASE I.—" I was called to a woman near her full time, who was ſeized with flooding and labour, in conſequence of being frightened by a fire which happened in the houſe, as well as from the fatigue incurred by removing the furniture. When I arrived, the fire was extinguiſhed, and I found her lying upon hay in a barn, loſing blood very faſt. The mouth of the womb being pretty largely opened, I immediately broke the membranes, which, with the waters, were puſhed down in every pain, and the hæmorrhage ſoon ſtopped: the patient was very cold, from the ſeverity of the winter ſeaſon, and the thinneſs of her covering. While I practiſed in the country, I always carried in my pocket ſome ſpirit of hartshorn, tincture of caſtor, and liquid laudanum, in ſeparate bottles. Of theſe, with the aſſiſtance of ſome brandy and water, I compoſed a cordial and anodyne mixture, of which ſhe took frequently two or three ſpoonfuls, and being accommodated with more clothes from the neighbourhood, ſhe recovered her natural heat, and at laſt enjoyed a plentiful ſweat and refreſhing repoſe. The pains were ſlowly augmented with long intervals; as her pulſe and ſtrength returned the labour advanced, and although it was tedious, ſhe was at laſt delivered. Yet her ſleep was afterwards interrupted by frightful dreams of fire; and ſhe often awoke in a delirium; ſo that twenty days elapſed before ſhe was out of danger. She had ſuckled her former children, but had no milk after this delivery, and but a very ſmall diſcharge of the lochia; theſe evacuations being impeded by the diſturbance of her thoughts. Her greateſt danger, however, ſeeming to proceed from weakneſs occaſioned by the loſs of ſo much blood, I thought the principal object of regard was the circulation, which was kept up by cordials and reſtoratives; and as ſhe was every now and then ſubject to ſhiverings, and laboured under a low weak pulſe, I preſcribed repeated doſes of the bark, and the moderate uſe of French claret, from which ſhe found great benefit.

" When labour is brought on, and a flooding occaſioned by ſuch alarms, ſo that the patient is exhauſted by the hæmorrhage, this is either diminiſhed or entirely carried off by breaking the membranes; and of late I have frequently ſucceeded in floodings that happened

before labour, by gently dilating the mouth of the womb with my finger, so as to bring on the labour pains, as in the following case:

CASE II.—" I was called, by a midwife, to a woman seized with flooding in the middle of the ninth month, though no visible cause could be assigned for this hæmorrhage; and she had bore children before with very easy labours. As the discharge was not so great as to require immediate assistance, and her pulse was rather strong than otherwise, I ordered her to be blooded to the quantity of eight ounces, and to be kept quiet in bed. Being costive, she received a clyster, took frequently two spoonfuls of a mixture composed of six ounces of the tincture of roses, and about twenty drops of liquid laudanum. The flooding abated, and she rested tolerably well that night; but when she rose to have her bed made, some large clots were discharged with a little pain, and the flooding returned, though it was soon restrained when she lay down again. In this condition, she continued for several days, during which, upon the least motion, some clots or coagula were forced off from the vagina, and followed by a fresh discharge, which, notwithstanding all our efforts to encourage her and support her strength, gradually weakened her constitution. It returning one evening with greater violence, I was called in a hurry, when I found her low and dispirited, and her friends in great anxiety and consternation. I had previously informed the midwife and relations, of the imminent danger that threatened the patient, if the flooding should not abate, or labour come on, and desired that some other gentleman of the profession might be consulted for their and my satisfaction; however this proposal they declined. Thus left to my own discretion, and feeling the os uteri very soft, though very little open, I gently introduced the tip of my finger, in order to dilate it, and desired the patient to assist my efforts by straining downwards. This method being gradually repeated every now and then, the parts were opened to the breadth of half a crown, and I produced some slight pains that returned of themselves. Notwithstanding several attempts, I could not break the membranes, until, gradually stretching the os externum during every pain, so as to introduce my hand into the vagina, I tried to advance my finger farther up; but not succeeding, I insinuated the female catheter, which breaking through the chorion and amnios, the waters were discharged in great quantity, the flooding immediately abated, and the child's head was pressed down upon the mouth of the womb. She now lay easy for a long time, without the return of a pain, during which interval, she was nourished and supported by frequently receiving a little broth. But being afraid that there might be an internal flooding dammed up by the child's head, I desired her to force down, while I raised the head with my finger, and accordingly several coagula were discharged from the uterus: I then thought it

advifable to bring on and encourage the pains, by ftretching as before; and to my wifh the parts were more and more dilated the pains grew ftronger, and at laft the patient was fafely delivered. During labour I frequently felt her pulfe, which inftead of finking, rather grew ftronger."

CASE III.—" I was called to a woman, by a midwife, who told me that the patient had been feized with a violent flooding, but labour coming on, the membranes had broke, and the hæmorrhage was abated; but fhe had fent for me, becaufe fhe found the navel-ftring in the vagina, and the woman was very weak, and had few or no pains.

" Indeed fhe was fo low, that I could fcarcely feel her pulfe; her lips were pale, and her extremities cold. I found the funis in the vagina, but could feel no pulfation: the child's head prefented, but was kept forwards to the os pubis, by the lower part of the placenta, which lay along the facrum; however, the flooding was entirely ftopped.

" I immediately directed her to take fome of the folution of portable foup; and hot bricks, wrapped in flannel, being applied to her feet and hands, in about an hour her pulfe grew ftronger, her extremities recovered their natural warmth, and the pains returned. Finding the head was hindered from advancing by the placenta, I brought down this laft, and the patient was gradually delivered of a fmall dead child; but fhe continued fo weak, that for many weeks after her delivery fhe was fcarce able to walk about the room."

CASE IV.—" I was called by the friends of a gentlewoman, who had been feized with a flooding the preceding night. The midwife told me, that the mouth of the womb was open to the breadth of a crown-piece; that the placenta prefented; that the pains were very flight and at long intervals; and that the flooding was then more violent than when fhe was called. I myfelf felt the pulfe was not fo weak as one would have imagined, confidering the quantity of blood fhe had loft.

" In this patient, who had formerly bore children, the difcharge began to appear in the beginning of the eighth month, returning every now and then, when fhe ventured to go abroad; but by the advice and affiftance of another gentleman, who was now obliged to attend another patient, it had been kept within bounds till this period, which was the beginning of the ninth month.

" As fhe would not permit me to examine, I privately advifed the midwife to introduce her hand by degrees into the vagina, and feel all around for the edge of the placenta, at which part fhe might tear the membranes; fhe accordingly felt them at the left fide, and a large quantity of the waters being difcharged, the child's head advanced, preffing the under part of

the placenta to the right fide. Then the pains increafed, the head gradually dilated the os uteri, and being fmall, defcended lower and lower, fo that in a few pains the patient was delivered. The flooding abated when the waters were difcharged, and was entirely ftopped as foon as the head plugged up the os internum. From time to time I felt her pulfe, which continued in much the fame ftate, or rather became ftronger; from which circumftance I concluded there was very little, if any, internal hæmorrhage; and her ftrength was kept up by her taking frequently a teacupful of broth, or wine and water."

Case V.—" I was called by a midwife to a gentlewoman, whom fhe had formerly delivered of feveral children. This patient was taken with a fmall difcharge of blood in the beginning of the ninth month, when I prefcribed venæfection and a clyfter; after the operation of which fhe received a paregoric draught. But the difcharge continuing for feveral days, though in a fmall degree, I examined and found the mouth of the womb very foft, placed fo high, and fo far backwards, that I could not perceive the placenta prefenting, though I felt through the vagina and uterus that the child's head refted againft the os pubis. As the difcharge did not weaken the patient, nothing was done, but I laid an injunction upon her, to refrain from going abroad. In about eight or nine days from this period, fhe was attacked with labour pains, and the flooding increafing, I received another call, when I was informed by the midwife that the mouth of the womb was largely open, that the waters had been difcharged immediately before my arrival, that the placenta had come low down, but fhe could feel no part of the child. A ftrong pain immediately fucceeding, I examined and found the placenta pufhing through the os externum, and the delivery of this was immediately followed by that of the child, which was alive, although the placenta came firft."

Case VI.—" I was called to a patient about the end of the eighth month of her fecond pregnancy. The midwife told me the waters had been difcharged two hours before my arrival, and the flooding ftopped; that feeling fomething like a flefhy fubftance come down, fhe had tried to pull it away, on the fuppofition that it was a falfe conception, and that thefe attempts were followed by a large quantity of blood. This fubftance, upon examination, I found to be the placenta low down at the os externum, and fliding my finger betwixt it and the os pubis I felt the child's head. During the next pain fhe was delivered of the placenta, which was much lacerated, and a dead child. I have been concerned in many cafes, where the flooding, when inconfiderable, was eafily ftopped, and the woman proceeded to the full time."

Case VIII.—" Some time ago," fays Mr. W. who communi-

cates theſe particulars, "I was ſent for to a woman after the midwiſe had made uſe of all her art to no effect: upon enquiry, I found ſhe had not gone her full time, the membranes were broke, and there had been, and ſtill was, a profuſe flooding. On touching, I could find no os tincæ. I then introduced my hand, with ſome difficulty, through the os externum, but could not readily meet with the os tincæ, being oppoſed by a ſoft fleſhy ſubſtance, which I took for the placenta, and which proved to be ſo, as I afterwards found it. The child lying ſo high, and being hindered by the placenta, I could not get my hand beyond the os internum, to feel the child, which put me to a ſtand. However, having taken out my hand, I kept my countenance as well as I could, and adviſed the woman to be of good cheer. Now from the great effuſion of blood, together with the foregoing circumſtances, I thought it abſolutely neceſſary to attempt her delivery, by opening the contracted parts, and turning the child; but I had no ſooner ſat down before her, than, providentially, ſhe had a ſtrong pain or two, and to my great ſurpriſe, the child was brought into the world, the placenta coming firſt, encloſed within its membranes. This plainly convinced me of the error of ſome who have aſſerted, that the placenta always adheres to the fundus uteri, ſeeing, in this caſe, it was the reverſe. With regard to this caſe, the information I ſhould be glad to receive is this: ſuppoſe the child had not been born as it was, whether I ſhould have endeavoured to paſs by the placenta, or extracted it before the child? and ſuppoſe part of the os tincæ is covered with part of the placenta, how to act?"

Dr. Smellie gives the following anſwer to theſe queries of his correſpondent. He ſays, "I had a caſe of pretty near the ſame kind; the placenta adhered to the lower part of the uterus, and as the os uteri began to ſtretch, that part ſeparated from the placenta, and then a ſmall flooding began. When I was called, the patient had ſome labour pains, and on examining, I found the os internum open about the breadth of half a crown, and the placenta preſſed a little down into it; as the diſcharge was not great, and the woman ſtrong, I delayed to deliver until the os internum ſhould be more open. Some hours after this, I was again called, the flooding was pretty violent, I found the os internum fully opened, and the placenta fully preſenting; I laid the woman on her back, with her thighs raiſed, then introduced my hand into the vagina, paſſed up by the placenta into the uterus, broke the membranes, and delivered the child by the feet, by which means I prevented the placenta from coming down firſt. The child was alive, becauſe part of the placenta adhered to the lower ſide of the uterus. I have had caſes where the placenta has come down into the vagina before the

child's head, and was obliged to deliver it firſt; but in ſuch caſes the child is commonly dead. It appears, in your caſe, that the os internum had been fully open, that the placenta filled all the upper part of the pelvis, and that the child being ſmall, and the placenta detached, they all ſlipped along with eaſe, and were ſo ſuddenly delivered."

CASE VIII.—About five in the afternoon, Dr. Smellie was called to a woman in the latter end of the eighth month, who, the preceding night, had been taken with a large hæmorrhage of the uterus, and had, every now and then, ſome ſlight pains. Feeling the os uteri a little open, and the placenta preſenting, he adviſed the accoucheur to dilate gently, every pain, and as ſoon as he could reach the edge of the placenta, to break the membranes. This he effected in a few pains: the waters were no ſooner diſcharged than the flooding ceaſed; and the pains growing ſtronger, puſhed down the child's head, which gradually dilated the os uteri. But as it paſſed, the detached part of the placenta was forced down with it, and actually torn from the reſt fifteen or twenty minutes before the child was delivered. They now expected the child would be loſt, from this laceration, but contrary to all expectation it was alive, and did well; the mother alſo recovered, though ſhe had loſt a great deal of blood, and had fainting fits before the doctor was called.

CASE IX.—A correſpondent of the doctor was called to a woman who had gone her full time, and had for three or four days been troubled with a flooding which then increaſed.

"I immediately," ſays he, "took ten ounces of blood from her arm, and preſcribed an opiate, that laid her quiet about three hours, during which the flooding abated. But when ſhe awoke and began to ſtir, it returned, though not to ſo violent a degree.

"In the afternoon, I was allowed to examine, and found the os internum very thin, dilated to the breadth of a ſixpence: but, as the flooding ſeemed to increaſe towards night, I ordered cloths dipped in cold oxycrate to be laid over the abdomen; this application being twice repeated, the flooding entirely ceaſed, labour pains came on, in leſs than an hour ſhe was delivered of a living female child, and both did well."

From Diarrhœa.

CASE I.—"Bilious colics, attended with vomiting and looſeneſs, being at this time epidemical," ſays Dr. Smellie, "I was called to ſeveral women labouring under theſe complaints, at different times of pregnancy, and they were generally removed by waſhing the ſtomach and inteſtines with warm water, and afterwards preſcribing opiates. One caſe, however, was more obſtinate. I was called to a woman who had been exhauſted and weakened by evacuations, for the ſpace of twelve hours before

my arrival. I was told by the midwife that ſhe was in labour of her firſt child, though ſhe wanted about three weeks of the full time; but I was not allowed to examine, a circumſtance at that time of little conſequence, becauſe, whether ſhe was or was not in labour, the firſt intention was to carry off the vomiting and looſeneſs, and recruit her loſt ſtrength and ſpirits, with all poſſible expedition. I immediately ordered her to ſwallow large draughts of mutton broth, which I found ready made, mixed with warm water, and theſe being thrown up at ſeveral times with little ſtraining, ſhe took thirty drops of liquid laudanum in a glaſs of brandy and water; but this being immediately rejected by her ſtomach, I gave her half the quantity of the laudanum in a little broth, and applied to her ſtomach a piece of brown paper moiſtened alſo with the laudanum; ſhe now began to be gradually relieved of the pain, vomiting, and looſeneſs, ſo that I was permitted to examine, and found the mouth of the womb thick and ſoft, opened to the breadth of a crown-piece; I likewiſe felt the membranes, waters, and child's head. The complaints beginning to return, I repeated the laſt doſe, and in about half an hour after ſhe had taken it, ſhe fell into a ſound ſleep, which laſted ſeveral hours, and awoke very much refreſhed, her complaints being entirely removed. All that day ſhe felt no labour pains, and as ſhe was very weak, I directed her to take frequently a ſmall draught of pretty ſtrong chicken broth, by which ſhe was gradually recruited. She ſlept well that night, and in the morning was taken in labour, which proved tedious and lingering; though ſhe was at laſt delivered of a large child which was dead, and in about ſix weeks ſhe was perfectly recovered."

Case II.—" I was called to a gentlewoman attacked by a violent purging, in conſequence of having caught cold by ſitting in an open chaiſe in rainy weather, when ſhe was eight months gone in her ſecond pregnancy. She had been exhauſted by the evacuation the preceding day and night, during which ſhe enjoyed no repoſe, and in the morning when I was called, I found her pulſe weak and ſlow, and her extremities cold; and ſhe told me, that in ſtraining upon the ſtool, ſhe had ſomething like labour pains. I immediately preſcribed the following:

(No. 4.) ℞ Theriac. venet. ℈ij.
Sumend. cum hauſtu ſequenti.

(No. 5.) ℞ Aq. cinamom. ℥iß.
Sp. nuc. moſchat. ℥ß.
Tinct. opii gutt. v.
Syr. papav. alb. ʒij. miſce.

She was directed to drink plentifully of white-wine whey, and warm bricks to be wrapped in flannel, and applied to her legs and arms, in order to reſtore the natural heat, to promote a ſweat, and encourage reſt. " In the mean time," ſays the doctor,

"I examined and found the os uteri largely open, and the head presenting; and by feeling the hairy scalp, perceived the membranes were broke. In consequence of what I had prescribed, her extremities became warmer, her pulse rose, she fell into a breathing sweat, and slept three hours; but being waked by a pain and fresh straining, I ordered her to take half the quantity of the former prescription, by which she was again relieved, fell asleep, and when she waked in the evening, was quite free from the pain, griping, and straining, though still very weak and feeble. To obviate this complaint, I directed her to take every now and then some red wine burnt, with nutmeg and toast, and in the intervals, chicken broth. She continued easy the night following: when I called next day, she told me she had some slight pains, and I found the child's head lower in the pelvis. The pains increased, and in two hours after I arrived the child was delivered."

The doctor says, he has often known, in such cases, premature labour pains vanish, and the woman proceed to her full time.

From Convulsions.

CASE I.—" I was called to a woman by a midwife, who told me that the labour had proceeded very well; that the membranes had not broke until the mouth of the womb was largely opened; but that the head was no sooner forced into the upper part of the pelvis, than the patient was thrown into violent convulsions, which went off and returned with every pain. She was a strong young woman, of a florid complexion. This was her first child: her pulse being full, hard, and quick, ten ounces of blood were immediately taken from her arm: the convulsions abated every pain until they went off entirely, and in about an hour after they left her she was safely delivered."

CASE II.—" A woman in her third pregnancy, near her full time, being taken with a giddiness which was immediately followed by strong convulsions, I was called by the midwife, and examining in time of a convulsion, found the mouth of the womb open, and the convulsion forcing down the membranes and waters, in the same manner as they are usually pressed down by the labour pains. She was insensible, and these fits returned every six or eight minutes. Her pulse being very quick and full, I ordered her to be blooded to the quantity of ten ounces, and a blister to be applied to her back. In consequence of these remedies, the convulsions abated and soon went off, but she was still insensible, and incapable of swallowing any kind of liquid. The friends being averse to my delivering her, I desired that in case the convulsions should return, I might be immediately called in order to deliver her, otherwise she would certainly be lost. My pro-

gnoftic was literally verified; for in about an hour after I went away they returned with fuch violence, that fhe expired before I could reach the houfe, but the child was delivered during one of the fits.

"In the courfe of this year, I attended feveral patients who were attacked in this manner, near their full time; fome of whom were relieved by blooding and bliftering, and went on to the ufual period: while others with whom this method did not fucceed, were, with the children, faved by immediate delivery. Other practitioners had cafes of this kind, during the fame time, fo that they feem to have proceeded from the conftitution of the weather."

Case III.—Mr. Mudge, of Plymouth, blooded a woman in the ninth month of pregnancy, who complained of a violent head-ach. He was again called in the evening, when fhe was feized with convulfions, for which he prefcribed a clyfter, blifters, a nervous mixture, and drops. At nine the fits became more violent and continued longer; and concluding that immediate delivery was abfolutely neceffary to fave her life, he examined by the touch; then putting the patient in a proper pofition, he introduced his hand into the vagina, and tried to dilate the os uteri, which was very rigid, fcarcely fo open as to admit a quill, and at firft very difficult to be diftinguifhed.

After feveral unfuccefsful trials with his finger, he was obliged to defift, in hope that it might be better difpofed to dilate by next morning, before which time, however, he was twice called in the night, found her in continual convulfions, and no alteration in the parts. About noon next day, he vifited and found her convulfed without intermiffion, though the force of the fits had not dilated the os uteri in the leaft, neither could her mouth be opened, fo as to receive any medicine. At feven in the evening he was called in a great hurry, when the midwife told him, that now the child's head was in the paffage. He could fcarce believe this information, which, however, he found literally true, and fent for his forceps to affift in the delivery; but juft as he was about to apply them, the head was forced out by the convulfions; he then delivered the body, and afterwards extracted the placenta, and the convulfions immediately abated.

Case IV.—This is a recent cafe of puerperal convulfions, which fell under the care of Mr. Chriftie, furgeon to the 27th regiment of foot, and is publifhed in the Medical and Phyfical Journal. It is related in the following words:

"M. Y. aged about 36, ftout, well made, corpulent, of a ruddy, healthful complexion, is the mother of five children. All her labours, except the one which is the fubject of the following defcription, were perfectly regular. The fourth child fhe had about three years previous to the laft; during which interval

ſhe had not any ſign of miſcarriage, although living conſtantly in the married ſtate.

"In the beginning of laſt June, having for ſome time before felt herſelf impregnated, ſhe wiſhed, as was her cuſtom, to loſe ſome blood, and ten or twelve ounces were taken from her arm. During the period of utéro-geſtation, ſhe enjoyed good health, although expoſed to conſiderable fatigue, wet and cold, during marches both in England and Holland. About the end of laſt November, ſhe was attacked with the ſymptoms of a ſlight cold, accompanied with a ſenſe of weight and oppreſſion about the præcordia. On the 1ſt or 2d of December, ſhe alſo complained of a heavineſs and pain of her eyes, with an intolerable giddineſs.

"She then told her huſband, 'ſhe was never in this way before;' and thinking that her complaints were connected with her labour, which ſhe expected every day, ſhe reported herſelf to the medical perſon on duty at the regimental hoſpital. She was adviſed to be blooded; but not aſſenting readily, and this not being inſiſted upon, a doſe of ſalts was given to her, which, by the bye, ſhe never took. Between the 2d and 4th of December, ſhe ſhewed more than common ſigns of anxiety, repeating ſhe was never in this way before: ſhe complained, particularly, of a dizzineſs and defect of viſion, and thought particles were floating before her eyes. On the morning of the 4th, her former medical attendant was called to ſee her, who took ſome blood from her arm, and I believe ordered her feet to be bathed in warm water. Her huſband now began to think her conduct was becoming extremely ſilly and inconſiſtent: in the night of the 4th he was convinced of it; for then, without aſſigning any reaſon, ſhe ſuddenly ſtarted up and laid herſelf down, with her head towards the foot of the bed. Surpriſed at ſuch conduct, he got a light, and obſerved her to ſtare wildly, talking at the ſame time incoherently, and ſometimes moaning. About this time a tremor extended all over her body, and ſoon after ſhe became permanently ſenſeleſs. Early in the morning on the 5th of December ſhe had a general convulſive fit; another returned in little more than an hour with increaſed violence; and with an interval nearly of this period, the fits recurred, more or leſs ſevere, during the forenoon of the 5th. About two in the afternoon I was aſked to ſee her: I found the poor woman lying perfectly comatoſe, inſenſible to the ſtimuli of light, ſound, or drink; her breathing ſlow and laborious, pulſe ſmall and interrupted. I was informed, that the woman who acts as midwife in the regiment, had been deſired to give her a clyſter, and, I believe, to apply a bliſter ſomewhere; but ſo little ſuſpicion had there been, even at this period, of the ſymptoms being connected with labour, that there was not even an attendant ordered, nor was any examina-

tion ſuggeſted or attempted. Should this ſtatement be ſuſpected, for a moment, to ariſe from any other motive than that of humanity, let thoſe concerned take a poſture of defence; let the advance be upright; honeſtly ſhall I combat; impartiality, truth, and the world being umpires.

" On examination, I found the os tincæ dilated, and abundant relaxation of the contiguous parts; the head of the child could be felt. I had been but a few minutes in the room, when the attendants told me, from the writhing of her body and ſigns of uneaſineſs, that ſhe would ſoon have another fit; ſoon after, a fit of general convulſion, with diſtorted and blackened countenance, foaming of the mouth, laſting I ſuppoſe for more than a minute, ſupervened; the ſame obſtinate ſtupor continuing after the fit was over. I ordered the nurſe merely to watch the advancing labour, while I took away twelve or fourteen ounces of blood from her arm; from this I could perceive no other apparent change than a leſſening of the redneſs in the countenance. The fits, for ſome time previous, had come on every half hour, and ſometimes even in leſs time; it was evident they were connected with the action of the uterus. The delivery of a ſtout, full-grown, healthy-looking child, was accompliſhed with aſtoniſhing rapidity, and without artificial aid, within an hour of my firſt ſeeing her; a ſecond pain expelled the placenta, which was large and natural, and there was no alarming hæmorrhage. A moſt profuſe ſweat followed the fit in which the child was born; and now there appeared to be ſome remiſſion in the general tumult of the ſyſtem: ſhe remained quiet, but perfectly comatoſe. From the occaſional writhing of her body, and preſſing downwards of her hands, I began to ſuſpect ſomething was wrong, or ſomething more was coming. An hour after delivery ſhe had another fit, equal in ſeverity to any of the former; I repeated the blood-letting, and now took the blood from the temporal artery, which flowed abundantly. On the ſecond examination, I found the os tincæ very much dilated, and I felt ſomewhat that made me believe there was either a polypous tumor, a falſe conception, or partial invertion of the uterus; it felt like the head of a child ſurrounded with ſome gelatinous matter or clotted blood. The ſwelling and motion of the abdomen too, were not of that equable kind which follows a common labour. I was extremely anxious, and requeſted the attendance of another gentleman, and Mr. Mackeſon, ſurgeon, in Deal, came in about three hours after the delivery; when ſhe had another fit of convulſion, though not equal in ſeverity to any of the former ones. The tumor we felt ſtill preſſing upon the cervix uteri, but it had become leſs diſtinct, and the roundneſs of the abdomen aſſumed a more regular and diminiſhed appearance; he ſatisfied me there was no ſecond child. A clyſter had been given ſhortly before

this, and immediately after the laſt fit, which appeared to excite ſeveral pains; but thoſe were either of the nature of after-pains, or in conſequence, probably, of ſome convulſive action of the uterus itſelf; which I think, in this caſe, had ſuffered a partial inverſion, forming the tumor mentioned.

"As her pulſe now roſe both in frequency and fulneſs, as her countenance ſtill appeared much fluſhed, and as ſhe ſtill continued to lie in an apoplectic ſtate, we agreed to take away more blood, ſhould the fits return. About ten o'clock in the evening, ſhe lay in the ſame profound ſtupor, but without any return of the convulſion. Saw her on the morning of the 6th about nine o'clock; ſhe had one fit in the courſe of the night, and it was leſs in violence than any of the preceding. Stupor remains—breathing hurried—pulſe about 110—ſkin hot—face fluſhed. Ten ounces more of blood were taken from the arm; ſhe retracted her arm as in pain, on the introduction of the lancet. At 8, P. M. oppreſſion in breathing leſſened ſurpriſingly, as well as the frequency of her pulſe, and redneſs of her countenance—ſtupor continues—her head is ſhaved, and a bliſter applied.

"7th December, mid day. Bliſter has been dreſſed—has had no return of the fit—ſtupor ſeems to wear off—ſhe looks up occaſionally on being ſpoke to, but immediately afterwards ſhuts her eyes, as if deſirous of remaining undiſturbed—pulſe upwards of an hundred, and feeble—ſkin moiſt and leſs hot than yeſterday. The lochia, of a natural appearance, have been in leſs than ordinary quantity; is now ordered to take a tonic mixture, in which there is aromatic confection and vitriolic æther, along with a gill of mulled wine, three times a-day.

"Nine o'clock in the evening. Skin ſtill agreeably moiſt, with little heat—pulſe ſtill upwards of an hundred in the minute. On rouſing her, ſhe immediately ſeems deſirous, as before, of remaining undiſturbed—is obſerved to ſigh frequently and deeply, as if from a ſudden ſurpriſe—ſhe alſo is ſeen often to ſtretch forth, and draw up her limbs, as if ſhe felt eaſe from this ſort of motion. Her pulſe ſeems to have a curious peculiarity in it: for thirty or forty ſtrokes, ſometimes for half a minute, it beats ſmall and weak; and afterwards, for a ſimilar time, it riſes fuller and ſtronger, reſembling as it were the ebbing and flowing of the waves of the ocean. In other caſes, where the powers of the conſtitution had been previouſly much exhauſted and deranged, and where they appeared to be gradually recruiting, I think I have more than once obſerved this waving ſort of feel in the pulſe: ſometimes, indeed, unequal preſſure of the finger may give one this ſenſation; but in this caſe, having felt both arms with attention, it was certainly diſtinct, and that without any evident intermiſſion.

"Morning of the 8th of December. Stupor continues wear-

ing off—pulse less frequent, still feeble—skin moist—bowels open; on desiring her to shew her tongue, she attempted it, by opening her mouth. Her countenance now shews intelligence, combined with anxiety; when counting the pulsations at her wrist, she was observed to look stedfastly, first at the watch, then at me, and then at the by-standers, communicating a sensation, peculiarly agreeable, and easier to be felt than described. The people around her now observe, that she seems anxious to say something, but has not yet uttered a word more than the monosyllables yes and no. Injunctions given to keep her very quiet; and especially when she asks any question respecting her situation, to inform her of it in as cautious, gradual a manner as possible, to guard the mind against any sudden exertion or shock. Ordered to continue the tonic remedies.

" Morning of the 9th of December. Pulse still feeble and frequent, skin moist, heat natural, tongue clean—now understands perfectly what is said to her, to which she gives distinct answers, but seemingly with reluctance: can now swallow, drink readily, and can even take a little light food. From this period she gradually recovered both the functions of the mind and the strength of the body. The secretion of the milk was for some days nearly gone. She complains of pains through her body, particularly in her limbs, and compares them to those pains felt after any long-continued violent exercise.

" 13th of December. Found her continuing in a state of convalescence, but very weak, and complaining still of the pains in her limbs; has yet no recollection of any thing that happened during her illness.

" 22d of December. She continues gaining strength; is not yet entirely free from the pains of the limbs: she came to recollect being reported to the medical person who first saw her; but beyond this period knows nothing of what happened in her illness. The secretion of the milk returned abundantly with her strength. She is now, at the time I am writing, in perfect health and spirits, and very thankful; for she rose again, although three days of her life have been buried in the darkness of death."

Mr. Christie adds the following reflections on this case:

" I hope," says he, " the history of the foregoing case will not be without its use; it is indeed a matter of regret that we know nothing at all of the state of the os internum at the time of the approach of the fits: and the propriety of assisting promiscuously, by direct means, the wished-for dilatation, is a subject well known to have the most able advocates; while others, of no less respectability, have doubted the propriety of the practice here spoken of *. It is quite foreign to my intentions, and indeed al-

* Among the former may be reckoned Dr. John Clarke, and with the latter Dr. Denman.

together beyond my present sphere, to attempt any decision on the question, What cases of labour, accompanied with convulsion, require direct artificial assistance; especially after the ample and satisfactory directions given in books on Midwifery: all I now aim at is, to inculcate the propriety of the evacuating plan, and particularly blood-letting, as I think I have, in more cases than one, prevented puerperal convulsion supervening, by the timely, free use of the lancet, where the approach of this dreadful symptom was not indistinctly marked, and in habits too where the propriety of blood-letting might have been much questioned. Most writers recommend an early attention to bleeding and purging, as the means most likely to prevent puerperal convulsion. The unfrequency of the symptom has probably prevented their recommendation from being sufficiently attended to, and I have reason to suspect it has been too often entirely overlooked. In the case before us, I was so much convinced of the utility of blood-letting, even after the fits had commenced, and after the delivery was accomplished, that I have no hesitation in believing, the fits would either have been altogether prevented, or at least highly modified, had the lancet been largely used when the woman first reported herself; as I consider that was the period the constitution received the warning of the impending danger: that the symptoms of oppression, the difficulty of breathing, the pain of the eyes and head, were the true fore-runners of the convulsions; that this was the most proper period for bleeding, and which should therefore put us on our guard in similar cases. With regard to the appearance of the blood in the present instance, if that is to be considered as an infallible guide, it was even in our favour, there being on the blood a slight buffy coat, except the blood drawn from the artery, which shewed a florid smooth mass, more homogeneous in its appearance than the veinous blood."

Labours rendered tedious by Inflammation and Fever.

Case I. In the month of March, which usually, in the country where Dr. Smellie then resided, was remarkable for the pleuretic fever that was epidemical, and often proved mortal if the patient was not plentifully blooded at the first attack, he was called to a gentlewoman in the seventh month of her pregnancy, who had borne several children. She was suddenly seized with violent stitches in her right side, and a great difficulty in breathing, for which she immediately lost ten ounces of blood. From other patients, attacked with the same disease, he had taken twenty ounces, and by repeating this evacuation once or twice, had frequently carried off the inflammation and fever, while those who were blooded too sparingly or too late, sunk under the disease; but he would not venture to bleed this patient to such a quantity, on account of her condition. Nevertheless, as the symptoms were alleviated, though not removed by the first venæsection, he

followed Sydenham's method in prefcribing plenty of diluents, and next morning repeated the blooding to the fame quantity. "Upon my firft arrival," fays he, "I had fent for an eminent phyfician who lived at fome diftance, and he approved of what I had done, advifing, that as it would be hazardous to take a large quantity at once from a perfon in her condition, fhe might be blooded the oftener; and this method being followed, in two or three days relieved all her complaints, having prevented a fuppuration, perhaps a mortification of the pleura. Though much exhaufted by thefe evacuations, fhe gradually recovered ftrength enough to proceed in her pregnancy; and in a fortnight after her recovery, was fafely, though prematurely, delivered of a weak child, which did not long furvive the birth."

Case II. A woman in the ninth month of her fourth pregnancy, was feized with a violent fever, in confequence of having caught cold. She complained of a racking head-ach, was between whiles delirious, and on the fifth day of the fever, fell into labour. Her pulfe was quick, low, and intermitting; fhe laboured under a fubfultus tendinum, and was in a little time delivered of a very weak child that foon died: her delivery was attended with inconfiderable difcharges; and fhe expired that fame evening.

Dr. Smellie fays, he attended in many cafes, in different periods of pregnancy, in the beginning, increafe, height, and declenfion of fevers, and the patient commonly recovered, if mifcarriage or delivery happened at the beginning or declenfion, provided the difcharges were not extraordinary; but when the fever was violent and at the height, the patient ufually died: and the child was frequently dead when delivered in the decline of the fever.

Difficulty arifing from Circumvolutions of the Funis Umbilicalis round the Neck of the Child.

Case I.—Dr. Smellie was called to a gentlewoman in the eighth month of pregnancy, by a midwife, who told him the labour had been very tedious: the head had been advanced to the os externum for near two hours, but was drawn up again after every pain.

"The patient being averfe to my examining," fays the doctor, "I advifed the midwife to introduce a finger or two into the rectum during a ftrong pain, when the head was low down, and preffing againft the forehead at the root of the nofe, keep the head in that pofition for a few pains. By this method the patient was foon delivered of a dead child, round whofe neck the funis was four times circumvoluted."

Case II. The fame practitioner attended a gentlewoman in labour of her firft child, whofe os uteri dilated with the membranes and waters, in a flow and gradual manner, until it was fully opened, when the membranes protruding to the os externum, were broke; then the head came down to the middle of the

pelvis, and being pushed further in time of a strong pain, it was drawn back to the same place as the pain abated, and continued to advance and retreat in this manner for several hours; so that the patient was very much fatigued, and her friends began to be very uneasy.

"That I might examine more narrowly," says the doctor, "I began to dilate and open gently the os externum during every pain, until I could easily introduce my fingers all round the lower part of the child's head, so as to perceive that the delivery was not retarded by the largeness of the head, or the smallness of the pelvis, neither could it be delayed by the contraction of the uterus before the shoulders, because the head began to be drawn upwards, immediately after the membranes broke; and the contraction seldom happens, until all the waters are discharged. From these circumstances, I concluded that the difficulty proceeded from the circumvolutions of the funis umbilicalis round the neck of the child. The left ear of the fœtus was to the left groin of the woman, and its right ear to her right side betwixt the sacrum and the ischium, the forehead being to the left.

"I resolved to assist in bringing the head lower, and keeping it so, with the help of the forceps, had it continued much longer in that situation; but as she had every now and then a strong pain, I first tried what might be effected by different positions, and directed her to bear the pains, standing, sitting, kneeling, lying on one side, or resting on the bed, in a posture between sitting and lying. This last was the most successful, and in three or four strong pains, the head, though still retracted, advanced lower and lower, and began to dilate the os externum. But observing that it made another stop, I introduced two fingers into the rectum, when it was pushed down by a strong pain, and pressing them against the lower part of the forehead, kept it down and prevented the head from returning, until the return of the next pain. I continued this method, in consequence of which the head advanced further and further, and assisted the delivery of it, by raising the forehead upwards with an half-round turn from the lower part of the os externum. The woman was soon delivered, and the funis was found three times round the neck, and once round the arms of the child."

This method Dr. Smellie frequently followed with success, when the forehead was come down to the os coccygis: but when it was advanced still lower, he withdrew his fingers from the rectum, in order to prevent a contusion of that part, as well as of the vagina, and pressed with his fingers on the external parts, and on each side of the coccyx. Care, however, was taken to avoid the eyes in this pressure, otherwise mischief would happen to them. He observes, however, that this assistance is not to be used, except when the head comes low down, without continuing to stretch

the os externum; for although it is retracted after every pain, yet, if by advancing a little in the time of pain, it dilates this part, ſuch gradual dilatation is much more ſafe for the woman, than a ſudden diſtenſion, by which the parts are in danger of being inflamed or lacerated.

CASES III. and IV.—In this manner Dr. Smellie aſſiſted in two caſes where delivery was retarded by the *ſhortneſs of the funis*. In one caſe the funis was not above two hands breadth long, though very thick.

Mauriceau, in p. 336, and Obſerv. 406, relates an inſtance of his having delivered a woman of her firſt child, whoſe navel-ſtring was extremely ſhort, and as thick as its arm. The child had been dead ſeveral days before delivery.

It may be proper to obſerve, that when labour is retarded by the ſhortneſs or circumvolution of the funis, the retraction or drawing back of the head does not begin to be perceived until it is low in the pelvis, whereas it is ſooner obſervable, when owing to the contraction of the uterus before the ſhoulders.

The head is alſo low down, before it can be retarded by one of the ſhoulders reſting above the os pubis or ſacrum, inſtead of being towards the ſides at the brim of the pelvis.

Impediments to Labour ariſing from Knots on the Funis.

CASE I.—“ My attendance,” ſays Dr. Smellie, “ was beſpoke to a woman, who imagined herſelf in labour about the end of the eighth month. This, however, was no other than a colicy pain, proceeding from coſtiveneſs, of which ſhe was relieved by a clyſter.

“ In a fortnight after this viſit, I was called, and found the membranes had broke; the waters were of a browniſh colour and mortified ſmell: the labour was lingering, and the child, when delivered, of a livid hue: the ſcarf-ſkin was eaſily ſtript off, the abdomen tumefied, and the funis ſwelled and livid, about ten hand breadths long, with a tight-drawn knot on the middle.”

CASE II.—The doctor attended another patient in a lingering labour, and delivered her of a living child, though there was a looſe knot on the funis, which was very long.

CASE III.—He alſo aſſiſted in a caſe, where the funis being nine hand breadths long, had a looſe knot on it, and was twiſted round the neck of the child, which was dead; though he ſuppoſes its death did not proceed from the knot or circumvolution, which were very looſe, but from the nature of the labour, which was very lingering, the head being ſqueezed to a great length, and the brain too long compreſſed in a narrow pelvis.

Tedious Labours arising from Contractions of the Uterus before the Shoulders, and these last resting above the Pubis or Sacrum.

CASE I.—Dr. Smellie discovered, by the following case, that labours are often rendered tedious and lingering by the lower part of the uterus contracting before the shoulders, when the membranes break, and the waters are too soon evacuated. This contraction not only keeps up the body of the child, but sometimes prevents the shoulders from turning from the upper part of the pubis to the side of the pelvis where it is widest. "I was called," says he, "by a midwife to a woman thirty-five years of age, in labour of her first child, the membranes having been broke a long time. I found the head presented almost as low as the middle of the pelvis, and that the os internum was fully open, and the pains strong and frequent, yet the head did not advance, but receded a little after every pain; a circumstance which at first I imputed to the funis.

"Finding the woman very uneasy, and her friends importunate, I amused them with a palatable mixture, of which I directed the patient to take two spoonfuls every half hour, my intention being to gain time: for I felt the child's ear at the upper part of the pubis, the head was small and very little engaged in the pelvis, and I could foresee nothing dangerous in the case. I accordingly took my leave, after having assured them she was in a fair way, and would in a little time be safely delivered by the midwife. In about two hours, I received another call, and was told the medicine had done her no service. I likewise understood from the midwife, that the child's head was very little advanced, and that she had kept her in an easy position, according to my direction. When I examined, during a strong pain, I found the head lower down, but as the pain abated, it was drawn back to its former place: upon which, I turned her upon her side, in order to bring down the head with the forceps, but first resolved to try what could be done by dilating the parts. Accordingly, placing her breech to the bed-side, I gradually opened the os externum, during every pain, introduced my hand up the vagina, and with great difficulty raised the head above the brim of the pelvis. In pushing up my hand, on the posterior part between the os uteri and head, I felt the lower part of the womb strongly contracted round the child's neck; then by continuing to push up further, I raised the child, and gradually stretched the contracted part; so that when I withdrew my hand, a strong pain immediately followed, and forced down the head to the lower part of the pelvis, and in a few subsequent pains the child was delivered."

Dr. Smellie says, that although the child be not large, nor the pelvis small, labour is frequently retarded by such contractions,

when the membranes are broke too ſoon; ſo that practitioners ſhould avoid breaking them, until the mouth of the womb is fully opened, that the head, by deſcending immediately into the pelvis, may plug it up and prevent the waters from being too ſoon diſcharged. Except, however, in caſes of flooding, where the leſs difficulty or danger muſt yield to the greater, and the membranes be broke, in order to ſtop the hæmorrhage.

By thoſe contractions, the child's head is ſeldom kept up ſo long as in the caſe deſcribed above, but is gradually puſhed lower down; and the labour is more or leſs lingering, according to the degree of contraction, and the ſtrength or weakneſs of the pains. In a word, there is ſeldom occaſion to aſſiſt, until the pains fail, as we ſhall obſerve in the more laborious caſes.

Lingering Caſes from the large Size of the Child.

CASE I.—"I was called," ſays Dr. Smellie, "to a woman, whoſe friends told me, ſhe had been three days in labour, and that the midwife, who had loſt her opportunity, was keeping her in hand. She, however, in her own vindication gave me to underſtand that ſhe had delivered the patient twice before; that the firſt labour was lingering, and the child, which was ſmall, came before the time; that the ſecond was alſo tedious, and the child, which was large, ſtill-born, becauſe they had ſent for her when it was too late to ſave it by making more room: that, in order to obviate the like misfortune upon this occaſion, ſhe had been called in good time, and conſiderably dilated the parts; but when the waters were diſcharged, the pains had not been ſtrong enough to deliver the child. She likewiſe affirmed, that when ſhe was called, there was no opening of the os internum, which did not begin till the preceding night; but that the woman laboured under a colic, attended with a looſeneſs, which had been ſtopt by ſomething preſcribed by the apothecary, upon which the pains grew ſtronger; and that ſhe, the midwife, had loſt no time, but tried all the different poſitions, and dilated the parts during every pain. Indeed, the looſeneſs had exhauſted the patient, and ſhe was moreover fatigued by the unſkilful management of the midwife, who was extremely ignorant, had never received the leaſt inſtruction, and ſeemed incapable of profiting by her miſtakes in practice.

"When I firſt examined, I found the mouth of the womb pretty largely opened, but thick and ſwelled; the external parts were likewiſe tumefied and inflamed. I afterwards, during another pain, felt the head preſenting, though very high up. Her pulſe being low and quick, I directed the attendants to put her to bed, and keep her as quiet as poſſible. As ſhe was troubled with a great drought, I deſired her to drink barley-water, and take now and then a little weak broth, with toaſted bread; and laſtly, in order to amuſe herſelf and friends, I preſcribed a draught

of ſyrup and ſimple waters to be repeated every two hours. Then exhorting her to diſregard the trifling pains ſhe had, I aſſured her they would grow ſtronger, and aſſiſt the delivery with better effect, after ſhe ſhould have enjoyed a refreſhing ſleep. Having given theſe directions, I took my leave about eight in the morning, and returning in the evening, was informed that ſhe had ſlept very ſound for five or ſix hours, ſweated plentifully, and undergone every now and then a ſmart pain.

" Finding the parts much ſofter, the heat abated, and the pains gradually puſhing down the head of the child into the pelvis, I encouraged the patient, telling her ſhe was now in a good way, though, in conſequence of her weakneſs, her delivery would require ſome time, and therefore ſhe ought to exert her patience. I likewiſe privately directed the midwife to let her reſt in bed, and ſleep as much as poſſible, without fatiguing her by a repetition of her former conduct. But notwithſtanding this expreſs admonition, when I was called early next morning, I underſtood ſhe had acted diametrically oppoſite to my advice, by raiſing her out of bed, and haraſſing her in the manner already deſcribed, ſo that ſhe was quite ſunk and diſpirited, and the external parts were inflamed and ſwelled as before. She was immediately replaced in bed, and a poultice of bread and milk being applied to the parts, I waited to ſee the event. She ſlept and ſweated a good deal, and when waked with a pain, took ſome broth, warm wine and water, and caudle alternately, at different times, ſo as to be much recruited and refreſhed; the inflammation alſo abated, upon which the poultice was removed, and the part cleaned; and the pains growing ſtronger, ſhe was delivered about noon, of a dead child, whoſe head was ſqueezed to a great length.

" I afterwards delivered this woman three times, and the children were all uncommonly large, but by giving her time, and keeping up her ſtrength, ſhe was ſafely brought to bed, and they were all alive."

Case II.—" I was, in the evening, called to a patient by the midwife, who told me the woman had been long in labour of her firſt child, that the os uteri had gradually and ſlowly opened, that the waters had been diſcharged a great many hours, and that the child's head did not advance.

" Upon examination, I found the head was come down to the middle of the pelvis; and the woman being ſtrong, with a quick, full, hard pulſe, was blooded to the quantity of ten ounces. She was kept quiet in bed, and ſlept betwixt the pains, every ſecond or third of which was pretty ſtrong. I deſired the midwife to indulge her with all poſſible reſt, and ſend to me if ſhe ſhould grow weaker, and could not be delivered by the pains.

" Accordingly I was called next morning, when I found the child's head advanced to the lower part of the pelvis; but the pa-

tient being exhaufted, and her pains growing weaker, I refolved to deliver by turning the child, or if that fhould not be practicable, to affift with the fillet or crotchet. I then did not know the method of delivering with the forceps.

"After having gradually opened the os externum with my fingers, I tried to raife the head, and introduce my hand into the uterus, fo as to reach the feet: but the contraction was fo great, that I could not advance further than the upper part of the vagina: upon which I determined to ufe the fillet; when a ftrong pain coming on, as I withdrew my hand, the head defcended lower, and in two more pains the woman was delivered of a child, whofe head was fqueezed to a great length."

Dr. Smellie fays he feveral times fucceeded in fuch cafes.

CASE III.—"In the fame year I was called to another woman, who had been long in labour of her third child. When I firft examined, I thought I felt the breech of the child, but afterwards found it was a large tumor on the child's head, which was pretty low in the pelvis. The patient had been much fatigued by the imprudent management of the midwife, the pains had become weak, and her pulfe was low. I directed her to be put to bed, to take fomething warm, and try to doze between the pains. By this method her exhaufted fpirits were recruited, her pains grew ftronger, I affifted as in the preceding cafe, and fhe was delivered of a dead child, with a large head fqueezed to a great length."

CASE IV.—"I was called to a patient, whom I had delivered twice before: in her firft labour I ufed the crotchet, in the fecond I tried the fillet, but without fuccefs; upon which I brought the child by the feet, though I could not fave it, becaufe the head was very large.

"Having found by experience that feveral children were loft by ufing thefe expedients prematurely, and by turning the child when a large head prefented in a narrow pelvis, I refolved to manage this cafe in a more cautious manner, and defired that I might be called in time.

"Accordingly, when I arrived, the midwife told me, that the patient had not been fatigued, and only once examined; the mouth of the womb was largely opened, and the gentlewoman being of a weakly conftitution, I kept her chiefly in bed. The waters broke foon after my arrival; the labour was very tedious from the largenefs of the head, which advanced very flowly in the pelvis; but by encouraging and keeping up her ftrength, fhe was at laft fafely delivered."

CASE V.—"In the courfe of the fame year, I attended a woman who had been long in labour, and whofe waters were difcharged many hours before I arrived. I found the mouth of the womb largely opened, the child's head had advanced to the mid-

dle of the pelvis, the patient very much fatigued, and the midwife told me her pains had been ſtrong, but were much abated.

"As I could not turn the child, I made a nooſe on a garter, which I, with great difficulty, fixed over the fore and hind head, and pulled gently during every pain; but, not ſucceeding, I increaſed the force until the nooſe ſlipped off. Then reſolving to try what nature would do, I preſcribed a gentle opiate, and ſhe being kept quiet in bed, enjoyed between the pains ſome refreſhing ſlumbers, by which her ſtrength was gradually recruited, and the pains growing ſtronger, ſhe was in about two hours ſafely delivered. The fillet had galled and inflamed the hairy ſcalp of the child, which, however, in conſequence of proper applications, recovered in a few days."

CASE VI.—"I attended a gentlewoman in the city, in labour of her firſt child. She was young, ſtrong, and healthy, had gone a month beyond the common time of reckoning, and the caſe was very tedious. For after the membranes had broke, and the child's head advanced a little in the pelvis, ſhe underwent many ſevere pains for the ſpace of four hours, before it deſcended to the lower part, where it continued two hours longer before ſhe was delivered.

"I perceived that the greateſt difficulty proceeded from the large ſize of the head; and ſhe being ſtrong, and the pains briſk, I thought nothing ſhould be done, but to encourage and prevent her from being fatigued. However, before ſhe was delivered, her ſpirits and pains began to flag, and her friends became very anxious and uneaſy; indeed I myſelf was not without apprehenſion that both ſhe and the child would be loſt.

"Though the pains were moſt effectual while ſhe continued in bed betwixt a ſitting and lying poſture, when they began to grow weak, I reſolved, as the head was low down, to aſſiſt with the forceps: but before I uſed that expedient, I thought proper to alter the poſition, and try what would be the effect of her taking ſome pains ſtanding, a poſture which had ſucceeded in other caſes. She was accordingly taken out of bed, and ſome looſe clothes being put on, ſupported between two women. Her pains increaſed in conſequence of this alteration, and after ſhe had undergone ſeveral ſevere ones, I found the child's head began to move lower and lower, and protrude the parts in form of a large tumor. Then ſhe was put to bed again, and with great difficulty I ſaved the perinæum from being torn. After the head was delivered, it required great force to bring along the ſhoulders: indeed this was the largeſt child I ever brought into the world alive.

"The head was ſqueezed to a great length, had a large tumour at the vertex, and if the mother's pelvis had not been very large, the child could not poſſibly have been ſaved."

CASE VII.—"I was called," ſays Dr. Smellie, "to a pa-

tient about the age of forty, in labour of her firſt child; though I was not permitted to examine, but obliged to wait in another apartment, in caſe of accidents. By the midwife's information from time to time, I underſtood the child advanced very ſlowly after the os uteri was largely opened, and the membranes had broke; and that the pains, though ſeldom, were pretty ſtrong.

"In this manner labour proceeded for the ſpace of twelve hours; at the expiration of which, the midwife told me that although ſhe had at firſt found the child was alive, by moving its head, ſhe was afraid it was now dead, for the pains had flagged for a long time, and a ſmall part of the head had been for two hours without the external parts, However, the child was delivered ſoon after ſhe gave me this account, and appeared to have been but a very little time dead: and, in all probability, when the head was ſo low and the pains abated, it might have been ſaved by the aſſiſtance of the forceps, which ſeldom or never fail when things are in that ſituation.

"I afterwards learned that the ſhyneſs of the patient proceeded from the artful inſinuations of the midwife, who terrified her with dreadful accounts of the uſe of inſtruments."

The candour and good ſenſe which diſtinguiſhed the amiable and judicious practitioner, to whom we chiefly owe the valuable facts contained in the preſent chapter, were never more conſpicuous than in the remarks attached to this part of the ſubject.

"During the firſt year of my practice," ſays he, "when I was called to lingering caſes which were often occaſioned by the imprudent methods uſed by unſkilful midwives to haſten labour, ſuch as directing the patient to walk about and bear down with all her ſtrength at every trifling pain, until ſhe was quite exhauſted, and opening the parts prematurely ſo as to produce inflammation, and torture the woman unneceſſarily; on ſuch occaſions, without knowing the ſteps that had been taken, I have been told that the patient had been in ſevere labour for many hours, and ſometimes days. and that now I was called to prevent her from dying with the child in her womb. Thus ſolicited, if the head was at the upper part of the pelvis, I commonly turned the child, and brought it by the feet; and thus, if ſmall, it was uſually ſaved, provided it was not dead before my arrival: but, when the head was large, or the pelvis narrow and diſtorted, the force neceſſary to extract it was often the occaſion of its death. On the other hand, when the head was ſo low in the pelvis, that I could not raiſe it into the uterus, in order to be turned, I was obliged to dilate the cranium with the ſciſſars, and extract with my fingers, aſſiſted by the blunt hook. This method, however, I never practiſed, except when the head was low down, and the patient ſo much exhauſted that ſhe could not be delivered by the pains; and not

even then, until after I had tried Mauriceau's fillet which always failed, and another introduced by my fingers in form of a noofe, which fometimes, though very rarely, fucceeded, when the child was fmall.

"I endeavoured (continues he) to reduce the art of midwifery to the principles of mechanifm, afcertained the make, fhape, and fituation of the pelvis, together with the form and dimenfions of the child's head, and explained the method of extracting . from the rules of moving bodies, in different directions. Neverthelefs, I had ftill fome occafion to perceive that children were loft, and the mothers endangered, by turning, when the head was large and prefented, or even by leaving the head to ftick long at the lower part of the pelvis, when the pains were weak and the patient exhaufted; for in this laft cafe the child, when delivered, was commonly dead, in confequence of the brain's having been compreffed; and the fame long compreffion had produced an inflammation in the vagina, os internum, and fometimes in the uterus of the mother. To obviate thefe misfortunes, I was fometimes obliged to have recourfe to the fillet or forceps, with which laft I frequently fucceeded, fo as to fave the child; though the ufe of them was fometimes attended with a laceration of the external parts of the woman, until I contrived an alteration in their form, and gave new directions for ufing them, by which this inconvenience is prevented.

"In a word, I diligently attended to the courfe and operations of nature, which occurred in my practice, regulating and improving myfelf by that infallible ftandard; nor did I reject the hints of other writers and practitioners, from whofe fuggeftions, I own, I have derived much ufeful inftruction."—After acknowledging the fources from which he derived many valuable hints, and among the reft avowing his obligations to Dr. Hunter "in reforming the wrong practice of delivering the placenta," Dr. Smellie fays, "I have given this fhort detail of my own conduct, for the benefit of young practitioners, who will fee, that, far from adhering to one original method, I took all opportunities of acquiring improvement, and cheerfully renounced thofe errors which I had imbibed in the beginning of life."

Difficulty arifing from the Hydrocephalus.

CASE I.—Dr. Smellie attended a gentlewoman in labour of her fourth child, and felt the membranes pufhed down, and the os internum and os externum largely opened. Before the membranes broke, the child's head continued a long time high up at the brim of the pelvis, and felt in fuch an uncommon manner, that he was for fome time uncertain whether it was the head or breech. But the waters being difcharged, it was pufhed a little lower down; then he felt the hairy fcalp, and perceived the head

was dropfical, from the loofenefs of the bones, and the great diftance between them."

After many fevere pains, the fcalp was protruded to the os externum, which the contained water diftended to fuch a degree, that the head paffed, and the child which was prefently delivered, feemed to have been dead but a very little time.

CASE II.—The doctor was called to a woman in labour of her firft child. The membranes and waters opened the os uteri in a very flow manner, and when they came down to the middle of the vagina, felt as if there had been one fet of membranes within another, though the internal feemed to be much thicker than the external. But before the os uteri was fully opened, the real membranes broke, and then he difcovered the other was the hairy fcalp, pufhed down by water contained in the fkull. This the pains forced down lower and lower, fo that the os internum being fully opened, it ftretched the vagina and os externum in the fame manner as they are commonly dilated by the membranes and waters of the fecundines; and he felt the bones of the fkull loofe and riding over one another.

At length the head being delivered, he was obliged to exert a good deal of force, in bringing along the fhoulders and body, becaufe the belly was fwelled. The funis was tumefied and livid; the child feemed to have been dead for the fpace of eight or ten days; and there was a large quantity of water contained in its head.

Lingering Cafes from a fmall, narrow, or diftorted Pelvis.

Although thefe labours may feem to be of the fame clafs, and require the fame management with thofe that proceed from a large head, there is an effential difference: for, though they are much the fame with regard to the efforts of the woman, the operator in thefe has much lefs room, when he is obliged to affift with his hand, and the child's head is disfigured and compreffed into large indentations, occafioned by the jetting in of the upper part of the facrum and vertebræ of the loins.

CASE I.—Dr. Smellie was befpoke to attend a woman of a middling fize, and to appearance well made, who had been three times before delivered of dead children. The firft prefented with the arm, and the midwife having kept her two days in hand, with promifes of fafe delivery, the friends called a gentleman of the profeffion, who with great difficulty extracted the child by the feet, and was fo much fatigued with the operation, that he was obliged to keep his bed for feveral days. "In her next child," fays the doctor, "I was employed, after fhe had been weakened and exhaufted by another midwife, who with great felf-fufficiency had undertaken to bring matters to an happy iffue.

"Having waited a long time to no purpofe, I tried the forceps;

and these failing, dilated the cranium according to the method described in laborious births. Then I found the difficulty proceeded from the large size of the head, and the jetting in of the upper part of the sacrum, which was not above three inches and a half from the os pubis. In her third labour I attended by myself; but the breech unluckily presenting, and the child being very large, I could not possibly save it, for I was fain to use the curved crotchet in delivering the head, to the great grief and mortification of the poor mother, who had suffered so much, and lost three children.

" When I was called to her labour of her fourth child, the mouth of the womb was open to about the breadth of a shilling, and the child's head rested on the upper part of the pubis, but was thrown a little more forward than usual, by the jetting in of the upper part of the sacrum, and the last vertebra of the loins. Labour being just begun, I encouraged the patient, by telling her that I had saved many children even where the pelvis was narrower than hers, and that I was now in great hope of succeeding, provided the child was not of an extraordinary size. As she had slept but little the preceding night, and her pulse was rather full, I ordered ten ounces of blood to be taken from her arm, and her intestines to be emptied by a clyster; and taking my leave in the morning, desired the nurse would not send for me until the membranes should be broke. She was accordingly kept quiet in bed, and enjoyed some refreshing sleep, and in the evening I received a message; then the membranes were broke, the mouth of the womb being largely opened, and the head beginning to be squeezed in at the upper part of the pelvis; but when the membranes gave way, the pains abated, as is commonly the case when the head is not small, or the pelvis large; for the pains she had hitherto undergone, proceeded from the membranes stretching the mouth of the womb; and now the head being kept up, did not continue the distension of these parts, but locked them up so as to detain a quantity of waters still in the uterus.

" I went away again, desiring the nurse to send for me when the pains should return and grow stronger; and in about three hours I returned, in consequence of another call, when I understood a great many cloths had been wetted, and that the pains were become stronger and more frequent. I then felt the child's head squeezed lower down, and but little water being discharged in time of a pain, I concluded that the whole quantity was almost expended, and that the uterus was contracted close to the body of the child.

" As the patient had been chiefly in bed during the whole day, I directed her to take her pains in a sitting posture, and now and then to walk about without fatiguing herself. She therefore sat in an easy chair, leaning backwards, and in this manner took

her pains, until towards morning, being very much fatigued, ſhe was again put into bed and laid on her back, her ſhoulders being raiſed with pillows ſo as that her poſture was between ſitting and lying. I deſired her in time of pain to pull up her legs, while an aſſiſtant ſupported her feet, and directed her not to force down, except when the pain was ſtrong. The head continued to advance very ſlowly, the bones of the cranium riding over one another, the vertex was ſqueezed down in a conical form to the lower part of the left iſchium; the forehead being at the upper part of the right, or rather above the brim of the pelvis on that ſide; the fontanelle was ſtill very high up, and I felt the ear at the os pubis. At every third or fourth pain, which was generally the ſtrongeſt, the head advanced, and the occiput was gradually raiſed to the ſpace below the pubis, the forehead turning backwards to the lower part of the ſacrum and coccyx.

"The head being now ſo low down, and diſengaged from its confinement and preſſure at the upper part of the pelvis, proceeded much more eaſily than before; however, as the child was large, and might be loſt in being detained too long by the contraction of the uterus before the ſhoulders, I aſſiſted a little, when the forehead was come down to the lower part of the coccyx, by placing my fingers on each ſide of it, in time of a ſtrong pain, in order to preſs the head forwards to the ſpace below the pubis, and prevent its being drawn back, upon the abatement or ceſſation of the pain.

"The head being delivered, I was fain to uſe a good deal of force in extracting the ſhoulders; for although I had brought them down to the lower part of the iſchium, I could not effect the delivery, until I introduced a finger above one of them, up to the middle of the arm, and by preſſing towards the ſacrum, brought it down with an half-round turn; upon which the body followed.

"The circulation of the funis being ſtopped, the child, which was very large, and whoſe head was compreſſed in a longitudinal form, lay five or ſix minutes before it began to breathe."

The woman recovered of this much better than of her former labours.

CASE II.—Two years afterwards, the doctor delivered the ſame patient of another child, when the labour proceeded much in the ſame manner; with this difference, however, that the membranes were unluckily broke by her motion in getting out of bed before ſhe had any pains. "I being called," ſays he, "in conſequence of this accident, found the os uteri ſoft and yielding, though very little open, and the child's head reſting above the os pubis, as in the former caſe. She was blooded and received a clyſter, as in the preceding caſe; but as the pains were not begun, and I was engaged at another labour, I left a midwife with proper directions

how to manage when the pains ſhould come on, until I ſhould be at leiſure to come and attend her.

"Soon after I went away, the pains began, and a large quantity of waters was from time to time diſcharged. When I returned in the evening, I found the os uteri pretty largely opened, and the head puſhed down to about one third of the pelvis; and taking it for granted, that ſhe would have many more ſtrong pains, and that all the waters were not yet diſcharged, I lay down in a bed to take ſome reſt, becauſe I had been much fatigued the night before, and deſired the midwife to call me as ſoon as the head ſhould be come down to the lower part of the pelvis. The patient bore many very ſevere pains with extraordinary courage: the child's head was in the ſituation deſcribed in about three hours after I went to bed, and in half an hour after I roſe, the woman was ſafely delivered of a living child. Since the publiſhing of the above, ſhe has been twice delivered in the ſame cautious manner by a midwife on my account, and the children were live-born, and did well."

Case III.—The doctor attended a woman whoſe pelvis was alſo diſtorted, and rather ſmaller and narrower than that deſcribed in the preceding caſe. She had, the year before, been long in labour, and much exhauſted before ſhe was delivered by another gentleman, who was obliged to open the child's head.

"Being called," ſays he, "at the beginning of this ſecond labour, I managed her much in the manner above deſcribed, and with great difficulty ſaved the child, which was ſmall; but when I attended her again in her next lying-in, I could not ſave the child, which, though larger than the former, was not above the common ſize."

Case IV.—Dr. Smellie's attendance was beſpoke to a woman who had been four times delivered by another gentleman of dead children; and it was alleged her pelvis was ſo narrow and ill-formed that ſhe could not poſſibly bear a living child.

"I was averſe," ſays he, "to interfere with my other practitioner, and actually refuſed to undertake the caſe, until I was importuned by two of her acquaintance whom I had delivered, and aſſured that the other gentleman would never be employed again at any rate: upon theſe repreſentations I promiſed to attend this patient, who was a little woman, of a delicate conſtitution, ſubject to icterical complaints, for which I adviſed her to conſult ſome phyſician; though in this particular ſhe neglected my advice, on the ſuppoſition that her health was mending.

"Soon after my firſt viſit, I was called to her, when ſhe imagined herſelf in labour, and found the mouth of the womb but very little open, though ſoft and yielding. Her pains ſeemed to proceed from her being coſtive, yet I felt the head reſting above the pubis, and was agreeably ſurpriſed to find the pelvis was not

ſo narrow as it had been deſcribed; for with the tip of my finger I could hardly reach the jetting forwards of the laſt vertebra of the loins, and upper part of the ſacrum; from which circumſtance I underſtood the pelvis at that part was not above half or three quarters of an inch narrower than thoſe that are well formed. I therefore hoped, that if the child was not large it might be ſaved, provided I could keep up the woman's ſtrength. With this view, after having encouraged her by communicating my opinion, I preſcribed a clyſter, after the operation of which ſhe took the following draught:

(No. 6.) ℞ Aq. cinnam. ℥iß.
Spiritus cinnam. ʒij.
Confect. Damocrat. ʒß.
Syr. papav. alb. ʒij. Miſce.

" It was now late," continues the doctor, " and I, being uncertain when labour would begin, ſtayed with her during the beſt part of the night, but went away as ſoon as the draught had thrown her into a profound ſleep. She was free from pain all next day, but I was called the following morning, when I underſtood ſhe had trifling pains in the night, though ſhe had ſlept at intervals. I found the waters puſhing down the membranes, and the mouth of the womb open to about the breadth of a crown; and ſhe being weary with lying, I adviſed her to riſe and take her breakfaſt. Having ſat with her about two hours, during which the pains were but ſlight and returned ſeldom, and believing they would not grow much ſtronger until the mouth of the womb ſhould be fully opened, the membranes broke, and the waters diſcharged, I propoſed to go and viſit ſome other patients, and laid injunctions upon the nurſe to put the woman to bed, and ſend for me as ſoon as matters ſhould be thus ripened.

" She ſeemed uneaſy at my going, and afraid I would not return. She obſerved, ſhe had been already two days in labour; that the other gentleman would not have waited ſo long, but have delivered her before this time, either by turning the child, or extracting it with inſtruments. The nurſe too made reflections of the ſame nature.

" I paid very little regard to what they ſaid of my predeceſſor, becauſe I could not pretend to judge of his practice, unleſs I had been preſent and known the particular circumſtances; and nothing can be more abſurd than to juſtify or condemn upon the hearſay of ignorant people, who are always apt to run into extremes of praiſe or diſpraiſe.

" I therefore told her, ſhe had not been in real labour till the night before; that I would do every thing in my power for the ſafety of herſelf and the child; and begged, that if ſhe was in the leaſt diffident of my ſkill, ſhe would ſend for the perſon who formerly delivered her; for I would not attempt to force matters, as there

was really no danger, even if the labour ſhould continue eight days longer. This declaration quieted the anxiety of the patient and nurſe, and I was permitted to go away after I had promiſed to return upon the firſt notice, which was about eleven; but at two I was ſent for in a great hurry. The nurſe had put her to bed, and I, during a ſtrong pain, felt the membranes puſhing down large and full through the os externum. As the pain went off, and they were relaxed, I perceived the head was at the lower part of the pelvis. I had ſcarcely time to put on a night-gown, when another pain returned, and the woman was immediately delivered of a ſmall child.

" From the eaſineſs of the birth, and the round form of the head, which was not at all compreſſed, I am inclined to believe that though the child had been of an ordinary ſize, it would have been ſaved.

" The patient recovered much better and ſooner after this, than after her former deliveries; the jaundice vaniſhed, and in two months ſhe was healthier and ſtronger than ſhe had been for many years."

Impediments to Labour ariſing from inflammatory or œdematous Swellings of the Pudenda, ſcirrhous Tumors, Polypus, or Calloſity in the Vagina or Os Uteri.

CASE I.—A woman in the latter end of her firſt pregnancy, had œdematous ſwellings in her legs, thighs, and pudenda; and being obliged to walk one day through the city, was very much fatigued, and in great pain. When Dr. Smellie examined the parts, the ſwelling, which before was œdematous, ſeemed to have contracted an inflammatory hue; the left leg and thigh were much more tumefied than thoſe of the right ſide, and the ſkin was ſomething of a livid colour. Twelve ounces of blood were immediately taken from her arm, ſhe was put to bed, and in conſequence of fomentations, in three days, the pain and inflammation abated: but the ſwelling of the pudenda ſtill continuing, he preſcribed an emollient cataplaſm to be frequently renewed, and from the firſt day ſhe had taken two doſes of gentle, cooling phyſic. On the fifth day ſhe was taken in labour, and though the parts were ſtill ſwelled, and ſtretched with great difficulty, ſhe was at laſt ſafely delivered.

The poultice was ſtill applied, the ſwelling gradually ſubſided, and ſhe recovered tolerably well.

CASE II.—In the courſe of the ſame year, the doctor was called by a midwife to a woman at Chelſea who was in labour. The labia pudendi were ſo exceſſively ſwelled, that both patient and midwife believed the child could not poſſibly paſs: and the tumefaction was attended with ſuch pain, that for three days ſhe had been obliged to keep her bed and lie on her back, without daring to alter that poſition.

When he examined her during a pain, the doctor found the os uteri very little open, and thence concluding labour was but just beginning, he punctured the parts in several places with a lancet; a large quantity of serous fluid was discharged, the swelling subsided, and the labour proceeded in a slow manner until she was delivered.

Such cases, he says, had often occurred in his practice, and he never knew them attended with any bad consequence; for when the swelling proved too great to permit the child to pass, it was commonly reduced by punctures, or when of the inflammatory kind, by bleeding, cataplasms, and fomentations.

CASE III.—A woman in labour of her first child, was attended by a midwife, who imagined that she felt the child's head, though very small, in the vagina; but examining again after a few pains, she felt that substance pushed to one side of the pelvis, and the membranes and waters forcing down at the other; these being broke and discharged, she found something like another head come down also. She being alarmed at this strange circumstance, recourse was had to a gentleman of the profession, who being also puzzled, made a pretence to leave her, and afterwards sent a message, desiring that another might be called, as he was indispensably engaged; but before any assistance could be procured, the woman was delivered by the labour-pains of a middle-sized child, and it was not till some months after, that the substance was found to be a scirrhous tumor, or excrescence of the polypus kind, adhering to the outside of the os uteri, which was afterward taken off by ligature.

CASE IV.—Dr. Smellie's attendance was bespoke to a woman who had recovered with great difficulty after a former tedious labour.

" When I examined," says he, " the os uteri was open to about the breadth of a crown, the membranes, with the waters, were pushed strongly down, and I felt uncommon hardnesses and strictures at the os uteri, in the vagina, and at the lower part of the os externum.

" The nurse, who formerly attended her, told me, that for some days after her last delivery, little fleshy substances were now and then discharged, of a blackish colour and bad smell; and that a long time elapsed before she recovered and was able to sit up.

" The labour now proceeded very slowly, until the mouth of the womb was fully opened, and the membranes breaking, the contracted vagina was gradually stretched by the head of the child; for notwithstanding the callosities which still continued, the neighbouring parts yielded by degrees, and although it was long before the os externum was sufficiently dilated, at last the child was delivered.

" I managed this case with great caution, because, from the imperfect accounts of her former labour, I supposed there had been a violent inflammation, and that the callous strictures were

the confequence of a partial mortification which had been feparated and caft off by nature.

"I kept her moftly in bed, and during every ftrong pain preffed my fingers againft the head, fo as to abate the force of the protrufion and allow time for the relaxation of the ftrictures, by which means the labour fucceeded beyond expectation."

Detention of the Shoulders and Body of the Child, after the Head is delivered.

Case I.—Dr. Smellie was called to a patient in labour, after the child's head was delivered, as the midwife could not extract the body, though fhe had pulled a long time with a good deal of force. He found the navel-ftring furrounding the neck, and luckily hooking with his finger that part of it which was next the child's belly, it was fo loofe as to flip over the head. He undid two other circumvolutions in the fame manner, and the child being difentangled, was immediately delivered.

In many other cafes, he fays he has freed the child from the circumvolutions of the funis, in the fame manner; and he was difpofed to believe, that it was very feldom if ever neceffary to cut and tie the funis before the delivery of the child, until his opinion was altered by the two following inftances.

Case II.—The doctor was called in a great hurry to a woman whofe delivery was retarded by the fame caufe defcribed in the foregoing cafe, and tried to difengage the child from the circumvolutions of the funis, though without effect. Then without waiting to make a ligature in two places, as we are commonly directed to do, he infinuated his fingers between one of the turns of the child's neck, divided the funis in two with fciffars, and delivered the body of the child, which was dead.

The face and neck were very much fwelled, and in this laft appeared a deep impreffion from the tightnefs of the circumvolution.

Case III.—He was afterwards concerned in another cafe of the fame nature. After having attempted, without fuccefs, to difengage the child by turning the funis over the head with his finger, he made a ligature in two places, between which he fnipped it afunder.

The confequence of this operation was, the immediate delivery of a ftrong lively child: another ligature was made near the abdomen, and the fuperfluity of the funis cut off.

In a few cafes the doctor found delivery retarded by the *fhortnefs of the funis*; but the child was always fafely delivered, by turning the body along the breech of the mother.

Case IV.—Dr. Smellie was fuddenly called to a woman in labour; the child's head had been delivered a long time, and the midwife had pulled with a great deal of force, at intervals. But before he arrived, the patient was delivered of a dead child,

whofe fhoulders were remarkably large. It happened in many cafes of this kind that the child was loft.

CASE V.—" I attended," fays the doctor, " in a labour that was rendered tedious by the large fize of the body after the head was delivered. I attempted to bring down the fhoulders in the gentleft manner, according to the directions in my treatife, but found I could not fucceed without ufing fuch force as would overftrain the neck, and deftroy the child: for the fhoulders were fo high that I could not reach with my fingers to the armpits. I then introduced the blunt hook, but could not fucceed, without running the rifk of breaking the arm, or overftraining the joint at the fhoulder; and, as the woman had ftrong pains, I refolved to wait their effect, without ufing any violence that might endanger the life of the child: accordingly, in three pains, I brought the fhoulder down to the os externum, then turning one of the arms into the hollow of the facrum, the body followed, and the child was born alive. From this and other cafes, I have learned to wait the effect of the labour-pains, rather than to ufe violence in pulling at the neck."

CASE VI.—In a letter from a correfpondent, Dr. Smellie received the following account:

" I was fent for," fays the writer, " to a woman, aged forty, who had borne feveral children before. When I came I found the frontal and parietal bones feparated from the reft, and without the vagina, the brain being evacuated I flipped up my fingers, and found the os tincæ contracted about the neck of the child, and endeavoured to pull it away, but in vain. I then fent for another gentleman, who firft got one hand into the uterus, and then flipped up the fingers of the other, and brought away the child. The woman's pulfe before delivery was ftrong, and fhe had little flooding; but we had not been gone a quarter of an hour when we were fent for again. They told us, that immediately after we went away, which was about five minutes after delivery, fhe was feized with a fhivering and vomiting, and had fainted. We found her in a fwoon, and held fpirits to her nofe; but fhe could not fwallow; and died in about half an hour after delivery."

To the writer's enquiries, " What was the caufe of her death? Was it owing to the lypothymia, occafioned by pain or lofs of blood, which indeed was not confiderable? Or might it not be owing to a rupture of the internal orifice, which the vomiting feems to have indicated?" Dr. Smellie replies, That in cafes where the head is delivered, and the fhoulders are fo large, or the lower part of the uterus is fo contracted, that the body cannot be brought away by pulling with moderate force, if the woman's pains have not entirely left her, or fhe is not in a dying condition from flooding, or other fymptoms, the beft method is to wait for the effect of the labour-pains: " for," fays he, " I have lately been concerned in a cafe of a weak woman, where the body of a

living child was delivered half an hour after the head was without the os externum.

" Now, as the patient was not weak, I think you might have waited and amufed her with medicines. Or if fhe had become weak, and nature feemed infufficient, you might have pufhed up your hand, and after having ftretched the contracted part, tried to deliver the child. If this method had failed, recourfe might have been had to the crotchet, as the child was already dead. This being fixed upon the body, would, by dilating the thorax or coftæ, have diminifhed the bulk, and brought down one fhoulder a great way before the other."

The doctor fays, he cannot pretend to afcertain the caufe of the woman's death in this cafe. " I have been concerned," fays he, " in feveral cafes, where, though the os internum was torn, the patient has recovered without vomiting, or any other bad fymptoms; and have known other women die, as it were, inftantaneoufly after delivery, though I always imputed fuch fudden death to their being exhaufted by long labour, the fudden emptying of their veffels, and a greater lofs of blood than their conftitution could bear."

SECT. III. *Of the* METHOD *of* DELIVERY *by* INSTRUMENTS.

When the powers of nature are infufficient to expel the child, extraordinary affiftance muft be had recourfe to. In laborious births, this is chiefly of two kinds:

I. The head is either extracted as it prefents; or,

II. Its diameter is diminifhed previous to the extraction.

The head may be detained from advancing through the pelvis by all the caufes formerly enumerated. Thefe are chiefly included in four general ones:

1. Weaknefs in the mother;
2. Narrownefs of the pelvis;
3. The bulk of the head of the child; or,
4. Its difadvantageous pofition.

Whatever is the caufe, when the natural pains begin to remit, and the parts of the woman begin to fwell; when her ftrength declines, her pulfe grows feeble, and there is no profpect of advantage to be gained by delay; meafures muft be taken for affifting the delivery, otherwife both mother and child may perifh from neglect.

As inftruments are never to be employed but in the moft urgent and neceffitous cafes, and exprefsly with a view to preferve the mother or child, or both; thofe of a fafe and harmlefs kind fhould always be made trial of, in preference to thofe of a deftructive nature.

SECT. IV. *Of the* USE *of the* FORCEPS.

The forceps is an inftrument intended to lay hold of the head of the child in laborious births, and to extract it as it prefents.

This inſtrument, as now improved, in the hands of a prudent and cautious operator, may be employed without doing the leaſt injury either to mother or child.

In every obſtetrical caſe, wherein manual aſſiſtance becomes neceſſary, the contents of the rectum and bladder ſhould, if poſſible, be previouſly emptied.

The membranes alſo ſhould be broken, the ſoft parts completely dilated, and the head of the child as far as poſſible advanced, previous to the uſe of any inſtrument.

The form and ſtructure of the parts of the woman, the ſituation and progreſs of the preſenting part of the child, muſt at this time be carefully conſidered. The concavity of the ſacrum, for inſtance, will determine the progreſs of the labour. The touch of the vertex, fontanelle, lambdoidal, or ſagittal ſuture, the fore or back part of the ear, or ſome part of the face, will aſcertain the true preſentation of the child.

The lower the head is advanced in the pelvis, our ſucceſs with the forceps is the more to be depended on. For when it has proceeded as far as the inferior aperture, by means of this inſtrument it may be readily relieved: but when the head of the child is confined at the brim, both the application of inſtruments, and the extraction by this means, are exceedingly difficult and dangerous.

The head may be ſo firmly wedged in the pelvis, that the forceps can neither be introduced nor fixed without bruiſing or tearing the parts of the woman: whatever, therefore, inſurmountable difficulties occur, either in applying or extracting with the forceps, the life of the mother muſt not be endangered by fruitleſs efforts: the head of the child muſt immediately be opened, and the delivery accompliſhed without further delay.

In laborious births, the proper forceps caſes may be reduced to two, which include, however, a conſiderable variety. Theſe are,
I. The ſmooth part of the cranium,
II. The face, preſenting.

The head may preſent,

1ſt, Naturally, when low advanced in the pelvis, with the vertex to the pubes, and the forehead or face in the hollow of the ſacrum. Or,

2dly, When higher in the pelvis, the vertex may preſent with the face laterally, the ears to the pubes and ſacrum. Or,

3dly, The fontanel may preſent with the face to the pubes and vertex to the ſacrum; or with the vertex to the pubes and face to the ſacrum.

1. *When the head preſents naturally.* The woman in this caſe muſt be placed on her back acroſs the bed, properly ſupported; the accoucheur, ſeated before or in a kneeling poſture, after gradually lubricating the perinæum and vagina, muſt proceed gently to ſtretch the parts, by paſſing the hand in a conical manner through the os externum vaginæ, puſhing it forwards by the ſide of the

child's head, till it advances as far as an ear, if poſſible: along this hand he is to guide a blade of the forceps, which with the other hand he introduces in the direction of the line of the pelvis, holding the handle backwards towards the perinæum, and keeping the clam cloſely applied to the child's head. This muſt be inſinuated very gradually by a kind of wriggling motion, puſhing it on till the blade is applied along the ſide of the head over the ear; he muſt then gently withdraw the firſt hand from the pelvis, with which he muſt ſecure the handle of the blade of the forceps already introduced, till the other blade be paſſed along the other hand, in the ſame ſlow cautious manner: the handles muſt then be brought oppoſite to each other, carefully locked, and, leſt they ſlip in extracting, properly ſecured by tying a fillet or garter round them; but this muſt be looſed during the remiſſion of pulling, to prevent the brain from being injured by the preſſure. The extraction muſt be made by very ſlow and gentle degrees, and with one hand only, while the other is employed to guard the perinæum: the motion in pulling ſhould be from blade to blade; the accoucheur muſt reſt from time to time, and, if the pains are not gone, ſhould always in his efforts only co-operate with thoſe of nature. The child and mother will ſuffer leſs by going on in this gradual manner than by precipitating the birth, which can never be done but at the riſk of deſtroying both. If, in making the extraction, the forceps ſlip, they muſt be cautiouſly withdrawn, blade by blade, and again introduced in the ſame manner. When the tumor of the perinæum forms, and the vertex begins to protrude at the os externum, the accoucheur muſt riſe from his ſeat, raiſe the handle gently upwards, and, by a half-round turn, bring the hind-head from under the ſymphyſis or arch of the pubes; remembering carefully to guard the perinæum from laceration and its conſequences, to which it is now ſo greatly expoſed.

In attempting the introduction of either blade, if it meets with any interruption, it muſt be as often withdrawn, and puſhed up again in a proper direction, till every difficulty be ſurmounted; and if, from the ſmallneſs or conſtriction of the parts, the introduction of the ſecond blade ſhall ſeem impracticable, the former one muſt be withdrawn, and the latter muſt be firſt introduced.

2. The vertex may preſent with *the face laterally in the pelvis*. It is always difficult to apply the forceps till the bulky part of the head has paſſed the brim; and here it is not only difficult to the operator, but extremely hazardous to the patient, to introduce this inſtrument till the ear of the child has got under the pubes. When the ears thus preſent to pubes and ſacrum, the woman ſhould be placed on her ſide or knees; the moſt difficult blade of the forceps ſhould be firſt applied, which is the one under the pubes; when both are paſſed, and properly ſecured, the patient ſhould again be turned to her back, before the operator attempts to extract; and the head in this caſe (as the quarter-turn can ſeldom be made with ſafety) ſhould be delivered in the manner wherein it preſents; becauſe,

when confined any time in the paſſage, its figure is altered by the overlapping of the bones, in ſuch a manner that it paſſes along, in general, with far leſs difficulty than to attempt to puſh up and make the mechanical turns; a work often altogether impracticable, by which contuſion or laceration of the parts of the woman, and the moſt fatal conſequences, may be occaſioned. The handles of the forceps muſt here particularly be well preſſed backwards towards the perinæum, that the clams may humour the curvature and intruſion of the ſacrum, and accommodate themſelves to the form of the child's head.

This is a caſe wherein the forceps often fail; if ſo, they will ſometimes ſucceed by varying the mode of application, and fixing them over the forehead and occiput; if this method fails alſo, the ſize of the head muſt be diminiſhed, and the extraction made with the blunt hook or crotchet.

3. The *fontanella* may preſent *with the face to the pubes.* This is the moſt common of the fontanel caſes; though ſometimes the face is lateral in the pelvis, ſometimes diagonal, and ſometimes it is turned to the ſacrum. The true poſition is aſcertained by the direction of the fontanel, and that of the ear. Here, as in other laborious births, nature ſhould be truſted as long as we dare. The head does not always deſcend mechanically through the capacity of the pelvis, as ſome practitioners have ſuppoſed; nor will the deviation from its ordinary mode of deſcent always of itſelf influence the delivery, at leaſt very rarely in ſuch a manner as to require extraordinary aſſiſtance. In whatever manner the head preſents, when it is ſituated high in the pelvis, the delivery cannot be effected without difficulty or hazard; in ſuch circumſtances, the application of the forceps will frequently baffle the utmoſt efforts of the accoucheur, and the conſequences of ſuch attempts may prove fatal to mother and child.

When extreme weakneſs in the mother, floodings, convulſions, or other urgent ſymptoms, render it neceſſary to force the delivery, whether the face be to pubes or ſacrum, the forceps may be applied along the ears, in the ſame manner as directed in a natural labour; and the head, for the reaſons already given, ſhould be brought along in the manner it preſents: the extraction ſhould be made with great deliberation, that the parts of the woman may have time to ſtretch; the perinæum muſt be carefully ſupported; the forceps muſt be gently releaſed, when the head is delivered; and the reſt of the delivery conducted as in a natural labour.

In this caſe, when ſituated high in the pelvis, the fontanel preſenting, and the face either to pubes or ſacrum, the long axis of the head interſects the ſhort diameter of the pelvis, and very often, though the forceps be applied, and a firm hold of the head be obtained, it is not poſſible to bring it along with all the force we dare exert. If this method therefore fails, the common forceps ſhould be cautiouſly withdrawn, and the long ones applied, if poſſible, over

the forehead and occiput, when the ſize of the head, by the compreſſion it ſuffers in paſſing along, being perhaps ſomewhat diminiſhed, the extraction will be ſucceſsfully performed. This method alſo failing, previous to the operation of embryotomy, Dr. Leake's forceps, with the third blade, may be had recourſe to. But of this little can be ſaid with confidence, till the inſtrument has been more generally employed. From the difficulty of ſucceeding in the application of the common forceps, it may, *à priori*, be concluded, that the introduction of a third blade, even in the hands of an expert practitioner, however ingenious the invention, is an expedient not eaſily to be put in practice. Neither is Roonhuyſen's lever, or a blade of the forceps paſſed up between the pubes and fore-head or hind-head of the child, in order to procure the delivery of the head, to be recommended in ſuch caſes: however ſome have boaſted of its ſucceſs, it is an inſtrument that may do much miſchief; and few practitioners can uſe it with ſafety.

II. *Face preſenting.*—Of laborious births, face caſes, as we have already obſerved, are the moſt difficult and the moſt dangerous. From its length, roughneſs, and inequality, the face muſt occaſion greater pain; and from the ſolidity of the bones, it muſt yield to the propelling force with much more difficulty, than the ſmooth moveable body of the cranium. Face caſes are the moſt troubleſome that occur in the practice of midwifery, and in which the moſt expert practitioners may be foiled in their attempts; and theſe attempts, if too early exerted, will be followed in many inſtances with fatal conſequences. Whatever way the face preſents, it ſhould be allowed to advance as low as poſſible in the pelvis; by which means the acceſs will be more eaſy, and the poſition, for the application of inſtruments, more favourable. In this awkward ſituation, much miſchief may be done by raſhneſs; whereas, if time be allowed, and the patient be properly ſupported, the delivery will generally end well.

The face may preſent with,

1. The chin to the pubes;
2. to the ſacrum;
3. laterally.

From the difficulty of applying inſtruments in theſe caſes, ſome authors recommend, as an univerſal practice, to turn the child, and deliver by the feet. But this in general is a dangerous practice, and ſeldom or never adviſable, except when the membranes remain entire, till the os uteri is completely dilated, and the head continues looſe about the brim of the pelvis; and even then the propriety of the practice is doubtful; becauſe if the head is ſmall, or the pelvis be well proportioned, the face will deſcend without much difficulty; and if otherwiſe, beſides the riſk in attempting to turn, the child may be loſt from the preſſure of the chord, or the difficulty of extracting the head after the delivery of the body.

When aſſiſtance becomes neceſſary, the beſt practice in face caſes

is the following: Having placed the patient in a convenient posture, let the accoucheur in the gentlest manner pass his hand within the pelvis; and, during the remission of pain only, endeavour to raise the head of the child, so that he may push up the shoulders entirely above the brim of the pelvis, and thus change the position of the face: by this means, if successful, he will be able to reduce the first of these cases, so as to make the fontanel present with the face to the pubes; he will reduce the second so as to bring down the vertex, with the face to the sacrum; and the third he will reduce to a vertex case, with the face lateral. The delivery may be afterwards trusted to nature; which failing, there is easier access for the application of instruments to make the extraction, as already directed The success, however, of the accoucheur, in altering the position of the head, by pushing it up, will entirely depend on the time he is called; for, should the head be firmly wedged in the pelvis, no force he dares employ will be sufficient to alter the posture.

If therefore every attempt to reduce the face, and make the vertex or fontanel present, shall prove unsuccessful, and symptoms are urgent, the forceps must be applied over the ears of the child, and the extraction performed in the best manner the operator is able. And, these failing, immediate recourse must be had to the crotchet.

1. In the first case, previous to the introduction of the forceps, the chin, if possible, should be advanced below the pubes.

2. In the second, the chin should be advanced to the inferior part of the sacrum. And,

3. In the third, the chin should be as low as the hinder part of the tuber ischii: and although in general the head is to be extracted as it presents, if the operator meets with considerable resistance, it must be gently pushed up and turned with the chin, either laterally, below the pubes, or into the hollow of the sacrum, according to the particular circumstances of the case, and in a direction best accommodated to the form and diameter of the pelvis.

In the Transactions of the Society in London, instituted for the Improvement of Medical and Chirurgical Knowledge, we find the following excellent observations on the management of cases in which the face of the child presents towards the os pubis, by Dr. John Clarke.

" Every person (says the doctor) who has been engaged in the practice of midwifery, knows, that if in labour the face of the child lies towards the symphysis pubis, considerable difficulty is thereby frequently occasioned.

" More force must be exerted by the woman, in order to expel the head so situated, and the labour will be protracted to a far greater length, than when the head is in the usual position, with the occiput towards the os pubis.

" The ground of this difficulty is, because in this situation, the whole of the face must descend through the pelvis, before any part of the head can emerge from under the symphysis pubis, and be-

caufe the bones of the face are incapable of undergoing any altera-tion from preffure.

" On the other hand, when the occiput lies towards the os pubis, the different bones of which the pofterior part of the head is compofed, are capable, in confequence of the incomplete offification at the futures, of very great alteration in their relative fituation, fo that the form of the whole head may become materially changed, and be better adapted to pafs out of the pelvis.

" Thus the fame head, from this variety in its pofition, may offer a very different degree of refiftance to the powers of expulfion.

" If the head fhould, unfortunately, be placed with the forehead towards the os pubis, and the woman fhould be ftrong, her exertions and pains muft be more violent in proportion to the increafed refiftance: but the labour, though prolonged very much beyond the ordinary bounds, may at length be finifhed by her own efforts. But in other inftances the difficulty may be fo confiderable, that her ftrength may be worn out without accomplifhing the birth of the child; and fhe muft either remain undelivered, or artificial force muft be fubftituted for the natural powers, which are found to be defective.

" This unfavourable pofition of the head may be detected by a very little attention to the fituation of the anterior fontanelle, and of the futures.

" If, on examination, the anterior fontanelle be felt, and the fagittal future be found running from it towards one of the facro-iliac joints, or directly towards the concavity of the os facrum, there remains no doubt that the face will be born towards the fymphyfis pubis.

" All the beft writers upon the practice of midwifery have taken notice of this caufe of difficulty in labour: but they have been contented with defcribing it, without fuggefting any means more efpecially fuited to this cafe. A reliance upon time, when the woman has ftrength, and the application of inftruments, when fhe has not, comprehend all the practical advice which is contained in their works.

" Chance firft led me to the knowledge of the fact, that in fome cafes this pofition of the head can be remedied without fubjecting the mother to any additional pain, or the child to any kind of danger.

" In a cafe where I had reafon to expect fome danger, I was defirous of knowing the precife pofition of the child's head, and whether it was in a fituation which would admit of delivering fafely with the forceps, if this fhould become indifpenfably neceffary. I found the face turned towards the groin, and on endeavouring to afcertain whether the ear could be felt, I was obliged to make a firm preffure againft the fide of the head with my finger.—In doing this it appeared to be moved a little. Aware of the great advantage which might arife to the patient if I could fucceed in bringing the occiput to the pubis, whether fhe were ultimately delivered

by nature or by art, I continued to make preſſure upon the ſide of the head, till in the ſpace of a few minutes the occiput was brought to the groin from the ſacro-iliac joint of the ſame ſide; the conſequence of which was, that, inſtead of the face, the occiput was born towards the pubis, and thus conſiderable pain and difficulty were avoided.

" Reflecting upon the event of this caſe, I thought that the ready alteration in the poſition of the head, might, in this inſtance, depend upon the pelvis of the woman being very large, relatively to the volume of the child's head, and that a ſimilar change could not be produced by the ſame means in other caſes of a ſimilar preſentation.—I determined, however, to make a trial in the next caſe which ſhould occur. Another caſe ſoon occurring, this practice was attended with equal ſucceſs.

" I have now met with fourteen caſes, in thirteen of which the practice has ſucceeded; and as ſome years have now elapſed ſince the firſt caſe, I think myſelf fully authoriſed in recommending this method to be always purſued, when the face is found in the ſituation above deſcribed. A great deal of pain, and much time, will be ſpared to the patient by theſe means.

" The manner of effecting the change is, by introducing one or two fingers between the ſide of the head, near the coronal ſuture, and the ſymphyſis pubis, and preſſing ſteadily againſt the parietal, or frontal bone, during a labour pain. When this is done, it will be found, in moſt caſes, that the head yields to the preſſure, till at length the occiput is brought to the groin. This being effected, the reſt ſhould be left to the natural efforts of the woman.

" It is unneceſſary to obſerve, that this alteration will be more eaſily produced, when the face lies towards the groin, than when the ſagittal ſuture runs directly backwards to the ſacrum: but even in this caſe, the change of poſition may be effected with much more facility than I before hand ſuppoſed to be poſſible.

" When the pelvis happens to be large, or the head of the child ſmall, as there will be more room for the head to turn, the difficulty of doing it will become proportionably leſs.

" In ſome inſtances, where the pelvis is ſmall, or the head large, or where the face is directly turned to the pubis, it may be impoſſible to change the direction: but theſe caſes are comparatively rare; and as no harm can ariſe from it, the attempt may always be made."

SECT. V. *Of the* USE *of the* SCISSARS, CROTCHET, *and* BLUNT HOOK.

When the head of the child, from its ſize, unfavourable poſition, or from a fault in the pelvis, cannot be protruded by the

force of natural pains, nor extracted by the forceps, recourse must be had to more violent means, and the life of the child must be destroyed in order to preserve that of the mother. This operation was by the ancients called embryotomy.

When the head, from its extraordinary bulk, is detained at the brim of the pelvis; on evacuating the contents, the bones of the cranium immediately collapse, and the head is afterwards propelled by the force of the labour pains; failing which only, the extraction must be made with the blunt-hook or crotchet.

The unfavourable position of the head is of itself a cause insufficient to justify the use of destructive instruments, which ought never to be employed but in extreme cases, after every milder method has failed. From the difficult access to the cranium in order to make a perforation and evacuate the brain, a face case makes a very troublesome and dangerous crotchet one. Very luckily, in narrow pelvises, the face rarely presents, and very seldom advances far in that direction; at other times the position may be so altered, that the crown, the back of the ear, or some part of the cranium, can be reached; otherwise the crotchet must be fixed in the mouth, orbit of the eye, &c. and the head brought along in that direction, till the sciffars can be employed to open the skull.

But the grand cause of difficult labour is, the narrowness or distortion of the pelvis. For when, at the brim, instead of four inches and a quarter from pubes to sacrum, it measures no more than one and a half, one and three-fourths, two, or two inches and one fourth, the use of instruments becomes absolutely requisite, and very frequently in those of two inches and one-half, and three inches; or when the diameters through the capacity, or at the inferior aperture, are retrenched in the same proportion, difficulties will in like manner arise, and the delivery, except the labour be premature, or the child of a small size, cannot be accomplished without the assistance of destructive instruments.

We judge of the form of the woman; by the progress of the labour; by the touch. When the fault is at the inferior aperture, the touch is pretty decisive; e. g. if a bump is felt in the os sacrum instead of a concavity; if the coccyx is angulated; if the symphysis pubis projects inwards in form of an acute angle; if the tuberosities of the ischia approach too near each other; or the one tuber be higher than the other; such appearances are infallible marks of a distorted pelvis. But when the narrowness is confined to the brim, this is only to be discovered by the introduction of the hand within the pelvis: the projection of the lumbar vertebræ over the sacrum, is a species of narrow pelvis that most frequently occurs in practice. In this case, the child's head, by the pressure it sustains between the pubes and sacrum, is moulded into a conical or sugar-loaf form, the parietal bones are squeezed

together, over-lapping one another, and will be felt to the touch when the labour is advanced, like an acute ridge, ſomething in the form of a ſow's back.

Inſtead of the complicated inſtrumental apparatus invented by the ancients, ſuch as ſcrews, hooks, &c. for fixing in, laying hold of, and extracting the head, as it preſented, an operation in many caſes difficult and dangerous, when the head was bulky or the pelvis narrow, as a woman frequently loſt her life in the attempt; the practice of diminiſhing the ſize of the head, by opening the cranium and evacuating the brain, previous to the extraction, is a modern improvement, and an important one: the inſtruments for this purpoſe conſiſt ſimply of a pair of long ſciſſars, a ſharp curved crotchet, and a blunt hook: theſe are preferable to every other, whether of ancient or modern conſtruction.

When the accoucheur is under the diſagreeable neceſſity of deſtroying the child to preſerve the mother, ſhe muſt be laid in the ſame poſition as already adviſed for the application of the forceps; and the ſame rules, recommended for the one operation, will in general apply to the other.

Thus, in the narroweſt pelvis that occurs, previous to opening the cranium, the ſoft parts ſhould be completely dilated, and the head of the child ſhould be fixed ſteadily in the pelvis, and advanced as far as poſſible; for while the head is high and looſe above the brim, the application of inſtruments is very difficult as well as hazardous.

The long ſciſſars muſt be cautiouſly introduced into the vagina, directed by the hand of the accoucheur; the points muſt be carefully guarded, till they preſs againſt the cranium of the child, which they muſt be made to perforate with a boring kind of motion, till they are puſhed on as far as the reſts; they muſt then be opened fully, carefully re-ſhut, half-turned, and again widely opened, ſo as to make a crucial hole in the ſkull. They muſt afterwards be puſhed beyond the reſts, opened diagonally again and again, in ſuch a manner as to tear and break to pieces the bones of the cranium; they muſt then be ſhut with great care, and withdrawn along the hand, in the ſame cautious manner as they were introduced, leſt they ſhould bruiſe or tear the uterus, vagina, or any other part of the woman. After a free opening in the cranium has thus been made, the brain muſt be ſcooped out with the fingers or blunt-hook, and the looſe ſharp pieces of bone muſt be carefully ſeparated and removed, that no part of the woman be tore while the head is extracting. The teguments of the ſcalp ſhould now be brought over the ragged bones of the cranium, and the woman ſhould be allowed to reſt an hour or two, according to her ſtrength and other circumſtances: the bones of the cranium will now collapſe; and if the woman has much ſtrength remaining, or the pelvis be not much diſtorted, the head being thus diminiſhed, will be protruded by the

force of natural pains; otherwife it muft be extracted, either by means of two fingers introduced within the cavity of the cranium, by the blunt-hook introduced in the fame manner, guarding the point on the oppofite fide, while making the extraction; or, failing thefe, by the crotchet, which, though dangerous in the hands of an ignorant rafh operator, may be employed by the prudent practitioner with as much fafety as the blunteft inftrument.

The method of introduction is the fame with a blade of the forceps. The chief thing to be attended to is, to guard the point till it be applied againft the head, and firmly fixed in its hold, which fhould always be fomewhere on the outfide of the cranium: provided a firm hold is obtained, no matter where, behind the ears, about the os petrofum, orbits of the eyes, maxilla inferior, &c. according to the prefentation of the head. The woman being properly fecured, and the handle of the inftrument covered with a cloth, the operator muft then pull, at firft gently, afterwards more forcibly, refting from time to time, and endeavouring to make the extraction in the beft manner the circumftances of the cafe will admit of. If the pelvis be much diftorted, fo that, by means of the utmoft ftrength the accoucheur can exert, little purchafe is made, he may apply to the oppofite fide a blade of the forceps, which are now fo conftructed as to lock with the crotchet; let him then bring the handles together, fecure properly, and thus endeavour to make the extraction. Should this expedient alfo fail, the blade of the forceps muft be withdrawn, the other blade of the crotchet muft be applied, the handles brought together and fecured, and the extraction made, moving from blade to blade.

Should the head prefent in fuch a manner, that, in attempting to extract it, the crotchet divides the vertebræ of the neck, and the head is thus fevered from the body, an accident that can only happen in the hands of an ignorant blundering practitioner; the head muft be pufhed up above the brim of the pelvis, the crotchet or blunt-hook muft be fixed under the axilla, the arms muft be brought down, and the body extracted, by fixing the crotchet below the fcapula on the fternum, or among the ribs; the head muft afterwards be extracted in the manner already advifed: or fhould the head in extracting be pulled from the body, as may happen when the child has been long dead, or when it is putrid, the delivery of the body muft be effected by means of the crotchet as now directed; a method preferable to that of turning, as fome advife.

If the head, inftead of yielding to the force of pulling, be at laft cut and broken in pieces, the operator muft endeavour to bring down an arm of the child, to fix the crotchet about the jaw or neck, pull at both holds, and thus attempt to make the extraction; this alfo failing, he muft bring down the other arm, fix the crotchet in the thorax, and, in a word, muft tear the child in pieces, that the delivery may be accomplifhed by any means.

In face cafes, where it is impracticable to alter the pofition, and when the pelvis is much diftorted, the double crotchet is fometimes requifite; the handles muft be well fecured, kept well backwards towards the perinæum, and the motion always from blade to blade. It very feldom, however, happens, that there is occafion for the double crotchet: by this means the head is flattened in pulling; whereas, if one blade only can be employed, the head is lengthened, and, in pulling, can better accommodate itfelf to the fhape of the pelvis as it paffes along.

SECT. VI. CASES *of* NATURAL LABOUR, *in which the ufe of* INSTRUMENTS *has been required.*

In the felection of thefe we fhall ftill follow Dr. Smellie, who, in Collection XXIV, firft fpeaks of laborious cafes, when the vertex prefents, and the child's head is low in the pelvis, and delivered with the fillet.

CASE I.—"I was called," fays he, "to a woman in her firft pregnancy, who had been long in labour, and very much fatigued by the officioufnefs of the midwife. I found the child's head at the lower part of the pelvis, where, as the midwife told me, it had remained from eight o'clock of the preceding night, though fhe had tried all the different pofitions; and I underftood that the waters had been draining off for twenty-four hours.

"Having loft fome children in cafes of the fame nature, by turning, and others by being obliged to deliver with the crotchet, after having tried Mauriceau's fillet without fuccefs, I refolved to form a fillet into a noofe, and endeavour to fix it round the upper part of the head with my fingers, hoping that I fhould fucceed in this cafe, becaufe I found the head was fmall, by moving my fingers eafily round it. Yet before I would attempt this method, I prefcribed ten drops of liquid laudanum, by which fhe procured fome fleep. Her ftrength being recruited, the pains returned, though weakly, and the head was forced down a little by each, though it afterwards recoiled to its former fituation: a circumftance which I at firft imputed to circumvolutions of the funis, or the contraction of theos uteri round the neck of the child. The os externum having been fufficiently opened by the midwife, I tried to flide up the noofe mounted on my fingers, along the fide of the head, and after many unfuccefsful efforts at length fixed it: then I pulled gently with one hand during every pain, while I preffed with the fingers of the other, at the oppofite fide; and thus pulling and moving from fide to fide, I made fhift to deliver, though not without having ufed a good deal of force; and the hairy fcalp was pretty much galled, but not fo as to endanger the life of the child.

"When I introduced the noofe, I was certified that the diffi-

culty did not proceed from the contraction of the os uteri round the neck, by feeling the os tincæ at the middle of the head; and when the child was delivered, the funis was not circumvoluted round the neck, so that I could not find out the cause that retarded the labour: I continued several years in this uncertainty, until I discovered that, in many cases, this obstruction proceeds from the contraction of the lower part of the uterus before the shoulders, or from the retention of these upon the pubis."

CASE II.—Afterwards the doctor was concerned in a case of the same nature, and found the woman much weakened by frequent discharges of blood. He delivered her, in the manner described in the former case, of a child that had been dead for some days; though he was obliged to exert greater force, because the head was larger, by which means the scalp was more galled, and part of it torn from the cranium.

CASE III.—In this case he tried to use the fillet upon a child which was higher in the pelvis, but could not fix it until he pushed the head above the brim; "then," says he, "my hand having more room, I accomplished my aim, and succeeded better in this than in the former instance, for the hairy scalp was not so much galled, because the woman had stronger pains to assist the expulsion."

He tried the fillet in several other cases, without success, and was obliged to deliver with the crotchet, because the children were large. In the three cases above related, the head being small, Dr. Smellie attempted to turn and bring the child by the feet; but this was prevented by the strong contraction of the uterus. It will be evident to the modern practitioner, that these were proper cases for the forceps. Dr. Smellie indeed says, "Had I then known how to use the forceps, I could have delivered with great ease, not only in these, but in several other cases where I failed with the fillet."

Laborious Cases, when the Head of the Child is low in the Pelvis, and delivered with the Forceps.

CASE I.—The difficulty in this case arose from weakness and anxiety of mind.

Dr. Smellie being called to a poor woman, found her in labour of her third or fourth child, and reduced to extreme weakness by long fasting, as she had not been able to go abroad for several days to beg in the streets. He immediately supplied her with some caudle, bread and broth: but her stomach was so weak, that it could retain but very little; for though he desired she should take it at first by cupfuls, she was so greedy of nourishment that she swallowed too much at once. However, she was afterwards restrained from doing herself an injury, and her stomach kept enough to recruit her strength, in some measure. He found the os uteri largely open, the membranes broken, and the

head at the upper part of the pelvis. One of his pupils managed the labour, having been directed to perſiſt in giving her nouriſhment, at proper times, and in ſmall quantity, and to let her lie moſtly in bed, that ſhe might enjoy ſome ſleep and refreſhment.

" Indeed," ſays the doctor, " when we firſt arrived, all of us were of opinion that ſhe would expire; but in two hours I found her pulſe raiſed, and her ſtrength recruited, though ſhe was ſtill weak, and her pains ſeldom recurred. Thus ſhe continued all night, ſleeping between the pains; and when I called in the morning, I found the child's head advanced lower in the pelvis. I could then diſtinguiſh, with my finger, the ear at the pubis; and by the fore-part of it, I diſcovered that the forehead was to the left ſide of the brim of the pelvis, and the occiput down at the lower part of the right iſchium. I likewiſe perceived that the head was not large, becauſe I could eaſily introduce my finger all round the lower part of it: and I felt the lambdoidal ſuture croſſing the end of the ſagittal on the right, and the fontanelle higher up on the left ſide.

" I left her again, after having deſired the pupil to proceed in the ſame cautious manner, hoping that as the patient was much recruited, the pains would grow ſtronger, and deliver the child.

" Being called in the evening, and underſtanding that the pains were ſtill weak, and the friends uneaſy, I examined in time of a pain, and found the head was lower, with the left ear turned to the left groin of the mother, the vertex puſhed out the perinæum, and parts adjacent, in form of a tumor, and nothing retarded delivery but the weakneſs of the pains.

" I waited an hour longer, encouraging the woman and her friends to exert their patience; but finding that, after ſhe had undergone ſeveral pains, the head did not advance, and that I could eaſily aſſiſt the labour, I placed her in the poſition choſen for lithotomy, and gently dilated the os externum with my fingers during every pain. When one was going off, I ſlipped up the fingers of my right hand to the os uteri, on the left ſide of the vagina, introduced one blade of the forceps between them and the head, turned the blade up towards the woman's groin, over the child's ear, holding it in an imaginary line with the ſcrobiculus cordis: then withdrawing my right hand, with which I took hold of the handle, I introduced the fingers of my left, on the oppoſite ſide, but more backwards, to the ſpace betwixt the ſacrum and iſchium, where the other ear was ſituated, within the os uteri, and preſſing the head againſt the blade that was introduced, ſo as to keep it in its place, I with my right hand inſinuated the other blade in the ſame manner on the right ſide of the vagina. Having ſecured and locked them together, I waited for a pain, and then pulled gently, by which means the head advanced ſlowly and gradually. This operation I repeated during every pain, the os externum was gradually dilated, the child's forehead

turned into the lower and back-part of the pelvis, and the vertex came out below the os pubis. By this time the tumor occasioned by the distension of the external parts, was become much larger, the perinæum was extended near three inches, the fundament stretched to two, and the parts between this and the coccyx much enlarged. The occiput coming out from below the os pubis, so as that I could with my finger feel the back part of the child's neck, I stood up, turned up the handles of the forceps, and gently moved from blade to blade, while at the same time I pressed the flat part of my hand upon the perinæum to prevent its being lacerated. Thus I continued pulling upwards, by intervals, until the head was safely delivered; then taking off the forceps, the body was easily extracted.

"While I was employed in tying the funis, some of the pupils observed, through the thin covering, that the woman's abdomen was still very big, and on examining in the vagina, I felt the membranes and waters of another child, which I brought by the feet, after the patient had taken some wine and water, and recovered of the fatigue of the first delivery."

Dr. Smellie used the forceps in this case, as a pair of artificial hands to assist the delivery, because the pains were too weak to expel the child.

Case II.—In the same year the doctor attended another woman, in labour of her first child, who was reduced to a very weak and low condition, by a tertian ague and extreme poverty. He was obliged to assist with the forceps, in the same manner as in the foregoing case, but the head was not so soon delivered, because the parts were more rigid. The abdomen appearing still very large after delivery, he found there was a second child, which was likewise brought by the feet.

Case III.—A woman was taken in labour of her first child, and reduced to a very low state by violent floodings, with which she was seized in the beginning of labour. According to the midwife's report the doctor found the mouth of the womb open and backwards, and the waters were not yet discharged. As the patient lost blood very fast, he introduced a finger into the os internum, and brought it forwards towards the pubis, and this irritation produced a pain which pushed down the waters and membranes: "these," says Dr. Smellie, "I tried to break, but not succeeding, I with two fingers pulled forward the os uteri a second time, and another pain ensuing, I slipped the point of my scissars between them, and as the child's head lay at a distance, easily snipt the membranes. The waters were immediately discharged in great quantity, and as the head came lower and locked up the parts, the flooding diminished, and in a little time entirely ceased. I then directed the woman to take a little broth frequently, and some wine and water, or caudle, until the

broth could be made, and desired the attendants to give her two spoonfuls of the following mixture every now and then:

(No. 7.) ℞ Aq. cinnam. ℥v.
Tinct. opii gutt. xx.
Syr. papav. alb. ʒij Misce.

"Her pulse being very low, the pains ceased for a considerable time, but by degrees she recovered from the extreme languor occasioned by loss of blood. As the discharge was stopped, I exhorted the women to wait patiently for the efforts of nature, and ordered the midwife to keep her quiet, and continue to administer the broth by little and little, as her stomach could bear it, until the loss of blood should in some measure be supplied. At the same time, as she was inclined to doze, I desired that she might have no more of the opiate. These directions I left in the evening; and I was called again at six next morning, when the midwife told me the pains had returned soon after I left the patient, but were so weak, that although the child's head was come low down, it could not be delivered without assistance. Upon examination, I found the vertex at the os externum, and the back-part of the neck at the pubis. The patient, though much recruited, being still weak, and the pains languid, I directed the midwife to proceed in supporting her with the broth, and prescribed a cordial mixture, without any opiate, to amuse the woman and her friends.

"I received another call at twelve, when I found things in the same condition; the pains being so feeble, that although the vertex was at the os externum, they had not force sufficient to propel it: I therefore began to dilate the os externum gradually during every pain, and moving her breech to the side of the bed, though in consideration of her weakness I let her lie on her left side, I introduced the blades of the forceps, one after another, at each side, between the sacrum and ischium, moving them forwards over the ears of the child; and although I could not reach the os uteri with my fingers, yet they passed without much difficulty. When they were exactly opposite to each other, and in a line with the scrobiculus cordis, I managed them as in the two former cases, and delivered the head slowly."

CASE IV.—A midwife, loquacious, extremely ignorant, and without the least tincture of knowledge in her profession, called Dr. Smellie to a patient, whose pains were just beginning in her first labour. She had imprudently walked her about and fatigued her so much, that she was quite exhausted, and the pains had entirely ceased. Finding, upon examination, the waters discharged, the head at the lower part of the pelvis, and the hairy scalp of the child, as well as the os externum of the mother, very much swelled, the doctor ordered her to be put to bed, and prescribed the following anodyne mixture:

(No. 8.) ℞ Aq. fontan. ℥v.
Tinct. opii gutt. xx.
Syr. Simp. ℥ ſs. Miſce.

He directed her to take two ſpoonfuls every half-hour, in order to procure ſleep, and applied to the os externum a large emollient poultice. Theſe ſteps were taken in the evening, and at three o'clock in the morning, when he attended, the woman had enjoyed tolerable reſt, and the poultice being removed, and the parts waſhed, the ſwelling was found to be much abated. "We, therefore," ſays he, "waited ſeveral hours in expectation that the pains would increaſe, ſo as to dilate the os externum ſlowly, and effect the delivery. In this hope, however, we were diſappointed: ſo that I reſolved to aſſiſt with the forceps, as the head was ſo low down; though it was ſo ſwelled, that I could not diſtinguiſh its poſition: for I could feel neither ſuture, ear, nor back-part of the neck. Neverthele ſs, I concluded, that as it was ſo low down, the ears would be to the ſides of the pelvis, eſpecially as the ſoft parts below were protruded by the head, yet not ſo much as to allow me to reach to the forehead, if backward, by introducing a finger in the rectum. However, I thought it highly probable, that the forehead was backward towards the ſacrum, rather than forward to the pubis; and in this perſuaſion, I directed the woman to be laid on her back acroſs the bed, with her breech a little over the ſide, her head being ſupported by the bolſter and pillows, and two aſſiſtants holding aſunder and ſupporting her legs. Then I introduced a blade of the forceps on each ſide of the head, and gradually aſſiſting as in the foregoing caſes, delivered the woman without lacerating her parts, or even marking the child's head."

Case V.—A correſpondent of Dr. Smellie's was called to a woman who had been two days and nights in labour, and very much fatigued. The pains had left her, and though the head preſented at the upper part of the pelvis, he delivered her ſafely of a living child, whoſe head retained no impreſſion or mark of the forceps.

Case VI.—Another, reſiding at Folkſtone, attended a woman who had been for a conſiderable time in ſtrong labour, ſo that her face was exceſſively ſwelled, her eyes ready to ſtart from her head, and ſhe was hardly able to ſpeak. The labia were very much tumefied, the vertex preſented, the head was low in the pelvis, and lay diagonally, the forehead being to the ſide of the ſacrum, and the occiput at the mother's groin on the oppoſite ſide, in which ſituation it had continued for the ſpace of five hours.

After having placed her in a ſupine poſture, he introduced the forceps, and delivered her of a dead child. As ſhe laboured under a dyſuria, from the tumefaction of the parts, ca-

ta-lafms were applied, and in a few days carried off that complaint.

CASE VII.—A practitioner at North Walfham, was called to a woman who had been long in labour, and the waters were difcharged. The child's head was low in the pelvis, the forehead being towards the left ifchium, but fo ftrongly compreffed that he could not raife it. He was therefore obliged to introduce the forceps diagonal-wife, fo that one blade was at the fore-part of the ear, and the other at the back-part of the other ear. After having turned the forehead backwards, into the hollow of the facrum, he delivered the woman; and the midwife, and all prefent, were agreeably furprifed when they heard the child cry, as they took it for granted its life could not be faved.

The writer of this account fays he did not ufe this method until after he had waited two hours, to fee if, by dilating the parts, the child, which was the woman's firft, could not be delivered by the labour pains.

CASE VIII.—In this and the four following cafes the difficulty arofe from *anxiety of mind.*

" Being called to a patient," fays Dr. Smellie, " the midwife told me that the labour had gone on as well as fhe could defire, until an officious woman came in, and in her hearing faid, there was a fire in the neighbourhood. She was fo much alarmed and affected at this report, that fhe was immediately feized with faintings and fhiverings, and her pains in a manner ceafed.

" Upon examination, I found the head low in the pelvis, the back-part of the neck being at the upper part of the pubis; from whence I concluded, that the forehead was turned to the concavity of the facrum, and that the ears were at the fides of the pelvis; all the back and lower part of which was filled up with the parietal bones.

" The patient being of a weak and lax habit, her pulfe low, and her fpirits depreffed, I prefcribed the following:

(No. 9.) ℞ Aq. cinnam. ℥v.
Sp. cinnam. ℥ß.
Tinct. caftor.
Sp. ammon. gutt. xxx.
Confect. arom. ʒß.
Syr. croci ℥ß. Mifce.

" Of this fhe took two fpoonfuls frequently, by which her ftrength was a little recruited, but her pains continued weak and feldom recurred, and I plainly perceived, that the labour was retarded by nothing but the want of ftronger efforts; for I knew the child was fmall, becaufe I paffed my fingers all round the head, which was not retracted after a pain.

" I had placed her in a pofition betwixt fitting and lying at the

bed's foot, one woman being behind to hold up her head and ſhoulders, and two others on each ſide to ſupport her legs, in hope that the weight of the child might aſſiſt the delivery. But finding that although the head was ſo low it did not advance, and having waited to no purpoſe for the effect of a great many ſucceſſive pains, which I encouraged and endeavoured to increaſe by ſtretching every now and then the os externum with one or two fingers, I thought it would be the ſafeſt method, both for the mother and child, to aſſiſt as in the former caſes under this head.

"Although a ſupine poſition would have better favoured the introduction of the forceps, yet, as the patient was weak, and the weather cold, I kept her on her left ſide, her breech being moved to the bed-ſide, and her knees up towards the abdomen, with a pillow between to keep them aſunder.

"Then inſinuating two fingers of my right hand between the ſacrum and left iſchium, to the inſide of the os uteri, I with the other introduced one of the blades, turning it forwards to the left ear of the child. Now withdrawing my right hand, with which I held this blade, until I puſhed up the fingers of the left hand at the other ſide, between the ſacrum and right iſchium, to the os internum, I introduced the other blade, moving it forwards over the right ear, and taking care, as I went up, to turn the handles of the forceps more and more backwards. Finding the blades exactly oppoſite to each other, I locked them, and began to pull gently from blade to blade during every pain. As the head advanced and dilated the os externum, I, with my right hand, turned the handles of the forceps more and more towards the os pubis, at the ſame time preſſing the palm of my left hand upon the perinæum, which was now pretty much diſtended. In a few pains the head was delivered, by moving the handles with an half-round turn towards the abdomen, and between the thighs, while, with the other hand, I ſlipped back the perinæum over the forehead and face of the child. Then taking off the forceps, the body was delivered, and the placenta coming down, was ſoon extracted."

Case IX.—"Dr. Smellie's attendance was beſpoke to a woman who loſt her huſband during her pregnancy: ſhe was naturally of a weak and delicate habit of body, but her weakneſs was ſo much increaſed by the grief produced by this misfortune, that ſhe looked like one ſtarved by want of ſleep, appetite, and digeſtion. "When labour came on," ſays the doctor, "I was afraid ſhe would have ſunk under it; for ſhe fainted ſeveral times, and threw up every liquid or cordial that was given to ſupport her.

"I kept her conſtantly in bed, and as it was her firſt child, the os uteri was very ſlowly opened by the waters and membranes, which luckily did not break, until this part and the vagina were fully dilated. As for the os externum, which I feared would not ſo eaſily yield, it was lubricated with pomatum, and I every now and

then gradually ſtretched it with my fingers during a pain. When the membranes broke, a large quantity of waters were diſcharged, the child's head being ſmall, ſoon came down to the os externum, the pains entirely ceaſed, ſhe could now keep ſome broth on her ſtomach, lay a long time quiet and eaſy, and enjoyed ſome ſleep, by which ſhe was very much refreſhed.

"In about two hours after the waters ceaſed to flow, ſhe was taken with ſome ſlight pains, by which the head was propelled in a ſlow manner, and puſhed the external parts a little outward, though it had not force ſufficient to dilate the os externum for delivery.

"After having waited in vain a conſiderable time, in hope that the pains would at laſt effect this dilatation, and the patient's ſtrength beginning to fail again, I applied the forceps, and delivered her pretty much in the manner deſcribed in the foregoing caſe."

Case X.—In the courſe of the ſame year the doctor was called to a woman by ſome of her neighbours, who told him it was not known that ſhe was with child until ſhe was in labour, when her mother had beaten, abuſed, and exaſperated her to ſuch a degree, that ſhe had become frantic.

"We found her," ſays the doctor, "lying in bed, ſo ſullen, that ſhe would not ſpeak. I examined as ſhe lay, and feeling the child's head low in the pelvis, waited a long time for a pain, but to no purpoſe; ſhe ſeemed to be afraid, and lay very quiet. Her breech being moved towards the bed-ſide, and kept in that poſition, until I introduced the blades of the forceps, as in the two laſt caſes, with this difference, the forehead was backwards, though towards the right ſide, that is, to the membranous part that fills up the empty ſpace between the ſacrum and iſchium.

"She lay quite calm and reſigned, while I introduced and placed the blades oppoſite to each other, and locked the handles firmly with a fillet, to prevent their ſlipping off the head, in caſe ſhe ſhould prove refractory: then, ſhe having no pains, I pulled the head lower and lower, until the perinæum and fundament began to diſtend, when I turned the forehead more backwards into the concavity of the ſacrum and coccyx. I afterwards pulled at intervals, and, as the head advanced and os externum ſtretched, I turned the handle of the forceps more and more towards the pubis, and delivered the head and body of the child as in the two former caſes."

Case XI.—A medical gentleman at Boſton in Lincolnſhire, was called to a woman, who, the day before, had complained of an head-ach, to which ſhe had been ſometimes ſubject: early in the morning ſhe was ſeized with convulſions, and lay inſenſible between the fits.

He found the os uteri open to the breadth of a crown, and very

thin; underſtood the membranes were broken; and the convulſions acted as labour pains. A ſmall flooding beginning, he tried to aſſiſt by ſtretching the parts, which yielded with ſome difficulty; and the head being advanced, he delivered the child with the forceps, which had made a ſmall impreſſion, though without excoriation.

The woman continued inſenſible for three days, but had no fits after delivery, except a few that were ſlight in the evening, and ſhe at length recovered. The child too, which was weak at firſt, did well.

Case XII.—A robuſt young woman, in the ninth month of her pregnancy, was, without any apparent cauſe, ſuddenly ſeized with violent convulſions, about ſix o'clock in the morning, after having complained all night of an head-ach and ſickneſs at her ſtomach, with vomiting, which, however, ceaſed when ſhe was taken with the convulſions. "About ten o'clock," ſays Dr. Smellie, "I found her violently convulſed, and the os tincæ a little opened: as ſhe had a florid complexion, and full pulſe, twelve ounces of blood were immediately taken from her arm, a ſtimulating clyſter was injected, and a cephalic julep preſcribed; but, notwithſtanding theſe remedies, ſhe continued convulſed, and quite inſenſible. Being called again by the midwife at eight o'clock, I found her extremely low, her pulſe being ſcarcely perceptible; and, upon examination, I perceived the child's head was, by the violence of the convulſions, forced low down into the cavity of the pelvis, with the ear towards the os pubis, and the forehead turned to the os ilium, on the left ſide.

"The forceps being introduced, in the manner deſcribed above, the woman was readily delivered, and the placenta, which firmly adhered to the fundus uteri, was afterwards brought away. She ſeemed eaſier after delivery, but her pulſe was ſo low that it could not be felt, and ſhe expired in about half an hour.

"From all theſe circumſtances, it plainly appears, that if the woman had been ſooner delivered, ſhe might have recovered as well as the perſon mentioned in the former caſe."

Difficult Caſes from the Rigidity of the Parts, Circumvolutions of the Funis, and Contractions of the Uterus, in which the Forceps were uſed.

Case I.—The labour in this caſe was retarded by rigidity. Dr. Smellie was called to a young unfortunate creature, about the age of fifteen, who was in labour. The membranes were broken before he arrived, and the os uteri, which was open to the breadth of half a crown, was very thin, but felt rigid in time of a pain.

"The labour," ſays he, "proceeded very ſlowly all night, and

when I returned in the morning, I found the child's head low in the pelvis, and the vertex protruding the parts below, in form of a large tumor; but the os externum was ſo ſtrait and rigid, that I could ſcarce introduce two fingers, and the pains were ſo ſtrong that I was afraid of a laceration. In order to prevent this, I, with the palm of my hand, applied againſt the perinæum, reſtrained the force of the head, and when the pain went off, dilated the os externum by little and little. However, two hours elapſed before it was ſo opened, as to admit all my fingers, which were ſo tired and cramped, that two of the pupils were obliged in their turns to aſſiſt in the ſame manner, and in about two hours more, it was ſo largely dilated, as to receive about one third part of the child's head, that puſhed out in a conical figure.

"By this time the poor creature was very much fatigued, and the pains were become ſo languid, that there was no longer occaſion to preſs the hand againſt the external part. Though we continued to encourage her, and ſupport her with caudle and broth, that the parts might have time to dilate, ſhe and they grew gradually weaker and weaker, and I began to be afraid, that if aſſiſtance ſhould be longer delayed, ſhe might be in danger of her life; for ſhe was every now and then attacked with fainting fits. When her pains began to grow languid, I had placed her in a poſture betwixt ſitting and lying, with her breech to the bed's foot, ſo that, without altering her poſition, I applied the forceps, and with great difficulty delivered her of a child, whoſe head being large, was ſqueezed to a great length, but in a few days retrieved its round form.

"The parts of the mother were ſo much inflamed, that for ſeveral days ſhe laboured under much pain and difficulty of urine."

CASE II.—"In the following year, my attendance was beſpoke to a woman in her firſt pregnancy, turned of forty, and of a thin, though healthy conſtitution. The pains proceeded ſlowly as in the former caſe, ſo that three days elapſed in a kind of lingering way, before the rupture of the membranes, which were puſhed down in form of a long gut. The waters being diſcharged, the child's head, which was ſmall, advanced downwards, puſhing before it the os uteri, which was not enough dilated to allow it to paſs; this I kept up during every pain, ſtretching it with my fingers, until I ſlipped it all round over the head. As the os externum, in the former caſe, had given me ſo much trouble, I now began in time to dilate it during every pain, and ſucceeded ſo well, that I was in hope the head would not be long retained after its arrival at that part. I found this precaution was right; for the woman had been ſo much and ſo long fatigued before the os uteri and vagina were ſufficiently diſtended, that when the head came down and puſhed out the external parts, her ſtrength and patience were almoſt quite exhauſt-

ed: neverthelefs, by amufing and encouraging her, fhe exerted her courage and fortitude for two hours longer, though to very little purpofe. At laft, perceiving the pains were too weak to force down the head, and dilate the parts fo as to let it pafs, though about one fourth part of it was already protruded through the os externum; obferving thefe circumftances, I fay, I tried to introduce the whalebone fillet, defcribed in my treatife, and alleged to be an excellent contrivance for helping along the head in fuch cafes. This I endeavoured to infinuate betwixt the child's head and facrum of the mother, but, as it could not be properly fixed over the chin, I withdrew it, and applying the forceps along the ears at the fides of the pelvis, affifted the delivery as in the former cafe.

"The child was large, and the head being compreffed into a lengthened form, produced convulfions; of which, however, it recovered, in confequence of my allowing the funis to bleed a little."

Case III.—A poor woman was taken in labour, which went on in the common way. The membranes and waters pufhing down opened the os externum, and when they broke, the head came down to the middle of the pelvis; but when propelled a little further by two or three fucceffive pains, it returned to the fame place, and continued to advance and retreat in this manner for the fpace of feveral hours; fo that the woman was much fatigued, and the pains became weaker and lefs frequent. "As this difficulty neither proceeded from the large fize of the head, nor the narrownefs of the pelvis," fays the doctor, "I concluded it muft be owing to the funis rather than to the contraction of the uterus before the fhoulders, becaufe this retraction of the head happened immediately after the rupture of the membranes, and before all the waters were evacuated: and I was certain that it could not be occafioned by the expanfion which happens in the abdomen of a dead child, becaufe I plainly felt it alive by the motion of its head.

"Thus convinced, I directed the patient to be placed in a pofture between fitting and lying, which, I imagined, might affift the delivery. When the head was forced down in time of a pain, I introduced a finger into the rectum, and tried to keep down the head, but could not reach fo high up as the forehead, which was to the right fight fide of the facrum. I then, during every pain, gradually opened the os externum, which eafily yielded, the woman having had children before; and introducing a blade of the forceps along each ear, that is, one at the left fide of the facrum, and the other at the right groin, I locked them together, fo that when the pain recurred, I could keep the head down, and prevent its being retracted. In the time of the next pain I brought it lower, and turned the forehead into the hollow of the facrum; and, in two pains more it was advanced to the lower part of the coccyx.

When it was in this ſituation, I introduced two fingers into the rectum to keep it down; but it being ſtill too high up, I, during the next pain, brought it lower, when, finding I could command the head, by preſſing my fingers againſt the ſinciput at the root of the noſe, I took off the forceps with my other hand, and helped the head along in the manner deſcribed in the lingering caſes.

"The funis being thirty inches in length, was twice circumvoluted round the neck, and once round the arm."

Case IV.—"In the month of September of the ſame year, I attended a private patient, who had been very much weakened by flooding from time to time. The membranes broke, and the labour proceeded tolerably well; but when the head came low down, it was drawn back after every pain, as in the former caſe.

"Having fixed the forceps, I brought the forehead down below the coccyx; but, as her pains were weak, and this was her firſt child, I kept on the inſtrument until one third of the head was without the os externum, and I found I could eaſily keep down the head by preſſing my fingers againſt the external parts on each ſide of the coccyx. After having taken off the forceps, I, during each ſucceeding pain, preſſed the head upwards with that hand, while, with the fingers of the other, I ſlipped the os externum over the child's head. The funis was uncommonly ſhort, and once round the neck."

Case V.—Dr. Smellie was, at three in the morning, called to a woman in labour, by a midwife, who told him, the waters had been diſcharged two days, even before the os uteri was much opened; that after this diſcharge the pains were lingering, and ſome part of the waters continued to dribble until the evening before he was called, when the head came lower down; but now it was, after every pain, drawn back out of reach, and the pains were grown much ſtronger.

"I took the proper opportunity," ſays the doctor, "of examining, and found the head propelled to the middle of the pelvis by every pain, after which it was drawn back to the upper part.

"After having ſeen her undergo ſeveral ſtrong pains, by which the head was not at all advanced, I eaſily introduced my hand into the vagina of the patient, who had borne ſeveral children; and, as the pain abated, raiſed the head ſo high above the brim of the pelvis, that I could paſs my right hand flattened along the left ſide, and over the forehead and the face of the child, where I found the lower part of the uterus ſtrongly contracted. I continued to puſh further up and dilate the part ſo as to be able to bring the child by the feet; but finding this expedient impracticable from the force of the contraction, I withdrew my hand in the beginning of a pain, and the child's head was immediately forced down to the os externum, though it was afterwards retracted to the middle of the vagina. However, having ſucceeded ſo far, I

waited for the effect of several pains, which I hoped would force the head lower down, now that it had made such progress; but finding my expectation disappointed, and knowing it be an easy task to assist the delivery, I had recourse to the forceps. One ear of the child being to the pubis, and the other to the sacrum, and the woman lying on her left side, I would not alter her position, but brought her breech to the bed-side, and moved her head to the upper and back part of it. Then sitting in a low chair behind the patient, the forceps being privately disposed, I easily introduced the fingers of my right hand to the os uteri, between the pubis and head of the child, which was small; and insinuated one blade of the forceps, gently, that I might not hurt the bladder; then I introduced the other blade upon my left-hand, between the other side of the child's head and the sacrum, carefully turning back the handle, in order to humour its curve; and being certain that the instrument was well fixed, pulled gently from blade to blade, and kept the head from being retracted as the pain abated.

"I continued to assist in this manner, during every pain, until the occiput was brought to the lower part of the right ischium, then turning the forehead into the concave part of the sacrum, the occiput came out from below the pubis, and the head was slowly delivered."

Case VI.—"In this case the waters had been long discharged before the head was forced into the pelvis, and we managed the labour in the cautious manner described above; yet after I had dilated the parts and applied the forceps, I could not by repeated trials bring the head through the os externum. Being assured from experience, that the obstruction proceeded either from the contraction of the uterus, or the detension of one shoulder above the pubis, and not from a tumefaction of the abdomen, because I felt a pulsation, though very weak, at the fontanelle, I disengaged the instrument, and raising the head again, found the difficulty was owing to the left shoulder's being over the pubis.

"As the woman lay on her back, I introduced my right hand, but could neither force the shoulders to the right side of the pelvis, nor push the child further up, so as to bring it by the feet, though the head was not large. I then, withdrawing my right, introduced my left hand on the other side, and raising the head, tried again to push up at the anterior parts of the child, so as to reach the feet; but failed once more, from the strong contraction of the uterus. However, getting hold of the left arm, I brought it down, and as I withdrew my hand, the head followed to the os externum and lower part of the pelvis. I turned the right arm to the right side of the sacrum, the pains being weak, again fixed the forceps, which I moved in a proper manner, and pulling gently at the handle, delivered the head, which was followed by the body."

CASE VII. Dr. Smellie was called by a midwife to a woman who had been many hours in labour, and found, that after the discharge of the waters, the head was forced low down by every pain, but afterwards drawn up again. He was likewise informed, that formerly she used to have large children and quick labours.

Encouraged by this intimation, he tried to turn the child, but was prevented by the strong contraction of the uterus; but in making this trial, and raising the head, he not only found the funis surrounding the neck, but likewise the uterus contracted before the shoulders. This last he dilated with his fingers as much as possible, then withdrawing his hand, applied the forceps, and delivered the child, which had been dead for some days. The funis was three times round the neck, being much tumefied and of a livid colour.

Laborious Cases occasioned by the large Size of the Child's Head, the Narrowness or Distortion of the Pelvis, when the Head is low, and delivered with the Forceps.

CASE I.—Dr. Smellie's attendance was bespoken to a woman who had lost her first child, in consequence of its large size. This second labour went on in the usual way, until the os uteri was largely opened by the waters and membranes, which breaking, the vertex advanced to near the middle of the pelvis. Then the pains ceased for about two hours, during which the patient lay easy, and enjoyed some sleep. After this intermission, a pain began to recur every now and then, and a good deal of water being discharged, they returned strong and frequent: as for the patient, whose constitution was weak, he kept her mostly in bed.

The parietal bones began to ride each other, the hairy scalp became loose and wrinkled, and the head was gradually and slowly squeezed down to the lower part of the pelvis, where it remained for a considerable time. The occiput was strongly pressed against the lower part of the right ischium, the fontanelle being at the upper part of the left; but the head was squeezed to so great a length, and so firmly compressed against the inside of the pubis, that he could not reach the ear with his finger.

After many strong pains the patient's strength and spirits began to flag, and both she and the friends became apprehensive that this child also would be lost, notwithstanding the encouragement the doctor gave, by telling them that he had delivered many women of living children after they had been much longer in labour.

The force of the pains was by this time abated, yet every now and then the woman was taken with one stronger, that forced the head a little lower, so that the child's left ear towards the left groin of the mother might be felt.

At length, the patient being ftill more exhaufted, and no further advanced towards delivery, the forceps were introduced as fhe lay on her fide, and, during every pain, an effort was made to bring the head lower, and turn the forehead backwards to the facrum. "But, in this attempt," fays Dr. Smellie, "the inftrument began to flip, fo that I was obliged to unlock them, and move each blade upwards again over the ears; the handles being fixed and tied with a garter, I turned the patient on her back, and directed an affiftant on each fide to fupport the legs: matters being thus difpofed, I waited for a pain, and gradually delivered her as in the former cafes." The child, whofe head was fqueezed into a lengthened form, feemed at firft to be in a convulfion, but foon recovered, in confequence of my letting the funis difcharge about two or three fpoonfuls of blood."

CASE II.—Dr. Smellie was called by a midwife to a cafe refembling the former. He tried the whalebone fillet, which he could not get over the chin; fo that finding the principal hold was on the face, he withdrew it, and waiting fome time, until the patient and the pains grew weaker, he applied the forceps, and fucceeded.

"My reafon for withdrawing the fillet," fays the doctor, "was, becaufe I durft not venture to exert fo much force as was requifite for delivery, left the part of which I laid hold, fhould have been galled to the bone; for I knew one inftance in which the fillet had been ufed, and actually fcalped the child; and another, in which the child's under jaw had been cut to the bone by the force of pulling."

CASE III.—In the courfe of the fame year, being called to a woman, who, according to the midwife's report, had been three days in labour, Dr. Smellie found the child's head at the lower part of the pelvis, and a large tumor on the vertex, protruded without the os externum. She had been in a flow kind of labour all Saturday and part of Sunday, when the membranes breaking, the pains became ftrong, and continued fo all Sunday night. By thefe the head had been pufhed down, but did not advance further than the fituation in which he found it on Monday night.

"The patient," fays he, "was much exhaufted by fatigue and the length of the labour. Her pains being languid, I prefcribed a cordial mixture, with the confect. cardiac.; and flowly dilated the os externum during every pain. By thefe efforts the pains grew ftronger, and I expected the head would foon be delivered. But being difappointed in my hope, I thought it was a pity the woman fhould be kept any longer in fuch a difagreeable way; and as fhe lay on her left fide, I endeavoured to raife the head, fo as to know its pofition. I failed, however, in my attempt, and there was no room for introducing a finger or two, to feel either the neck or ear at the pubis; though as the head was fo low down, I

thought it was probable, that the ears were to the ſides of the pelvis. I then directed her to be turned on her back, and ſupported by aſſiſtants, as the patient in the former caſe, and ſat down with a reſolution to deliver, either with the forceps or crotchet, in order to ſave the woman's life; though I determined to try the forceps firſt, that the child alſo, if poſſible, might be ſaved. As the head, which was compreſſed into a great length, filled up all the lower part of the pelvis, ſo that I could not introduce my fingers to guide the blades of the forceps on the inſide of the os uteri, I attempted to introduce them ſeveral times, until I was certain that they were ſafely paſt this place, and not on the outſide of the os tincæ. Being convinced that I had ſo far gained my point, I began to bring the head lower during every pain, and at laſt delivered the woman of a dead child, whoſe head was ſqueezed to a great length."

CASE IV.—" I attended a woman in labour of her firſt child. She had undergone lingering pains all Sunday night, and I was called next morning at ſeven. But the pains being inconſiderable, the membranes unbroke, and the patient reſerved, I was not allowed to examine until ten, when the pains grew ſtronger. Introducing my finger into the vagina, I felt the rectum full of indurated fæces, the os uteri ſoft, thin, and pretty open, the waters puſhing down the membranes, and when the pain went off, the child's head reſting againſt the upper part of the pubis.

" I immediately preſcribed a clyſter, which operated to our ſatisfaction; and as ſhe had enjoyed ſome ſleep in the fore-part of the night, I deſired ſhe might riſe until the bed could be prepared before labour ſhould be far advanced. Every thing proceeded in an eaſy and ſlow manner, and ſhe took her pains in an eaſy chair, till about twelve, when ſhe was pretty much fatigued. I then directed her to take ſome pains on the bed, and now felt the os uteri largely opened, the membranes puſhed down large and full to the os externum; but the head was not at all advanced.

" Judging from this circumſtance that it was large, I would not allow her to be put into bed too ſoon, becauſe, if, after the rupture of the membranes, the head ſhould not come down without difficulty, it might be neceſſary to aſſiſt the delivery by different poſitions; and, in the mean time, as the pains were ſtrong and frequent, I directed them to get ready cloths to receive the waters as ſhe lay on her ſide, for I now expected that the membranes would ſoon give way. Accordingly, the waters were in a little time diſcharged; but perceiving that the pains ſoon after abated, and the head did not advance, I allowed her to riſe and walk about, and ſhe took her pains ſometimes in a ſtanding and ſometimes in a ſitting poſition; though, in order to prevent her being fatigued, ſhe every now and then reſted on the bed, half ſitting and half lying. By theſe means the pains increaſed, and at two

next morning the head was advanced to the os externum and lower part of the pelvis. That it might not be detained too long in this ſituation, I began to dilate the os externum a little during every pain, and theſe efforts kept the pains, which were become languid, in conſequence of the fatigue ſuſtained by the patient. The head was not at all advanced further at four o'clock, when I plainly felt the occiput ſtrongly preſſed againſt the lower part of the left iſchium, the parietal bones riding one another, the head, which was large, ſqueezed to a great length, and one of the ears at the pubis. Perceiving the pains were not ſtrong enough to puſh the head further, ſo as that the occiput might riſe from the iſchium to the ſpace below the pubis, and the forehead turn back into the hollow of the os ſacrum, and knowing that I could eaſily aſſiſt and alter the poſition with the forceps, I thought it was a pity that the mother and child ſhould run any further riſk, and ordering her to be put into bed, I applied the inſtrument, and delivered the child."

Case V.—" A woman had been in labour of her ſecond child, for many hours after the os uteri was largely opened, and the membranes had broke, and the midwife had aſſured the friends, that the head would be delivered by each ſucceſſive pain. At length, however, the patient's ſtrength beginning to fail, they ſent for me at three in the morning, when I found the child's head low down, puſhing out the parts, in form of a large tumor, and the ſcalp very much tumefied.

" After having tried in vain to aſſiſt the birth, by gently dilating the os externum, and during ſeveral pains, I directed the patient to be put in a ſupine poſture, and as ſhe was very weak, ſat down with a reſolution to deliver, either with the forceps or crotchet; for I found it was wrong as well as impracticable to bring the child by the feet. The head was ſo large, and compreſſed into ſuch a lengthened form, that I could not puſh up my finger at the pubis, to feel the ear or neck; neither could I diſtinguiſh the ſituation of the head by the ſutures, becauſe the ſcalp was ſo much ſwelled: nor could I move the head upwards, in order to feel the upper parts, ſuch as the ear, neck, or face. But ſuppoſing from the touch of the lower part of the head, that one part preſſed more againſt the left iſchium than the right, I concluded that the forehead was at the right ſide of the ſacrum, and the occiput ſtopped between the left iſchium and groin.

" In this perſuaſion, I introduced one blade between the child's head and the mother's right groin, and the other at the left ſide of the ſacrum along the ears, then locking the handles, I tried to turn the forehead more backwards, but could not, until I had pulled the head a little lower, when I ſucceeded in delivering the woman."

Case VI.—" In the January following, my affiftance was folicited in a cafe of pretty much the fame nature. The woman was greatly fatigued and exhaufted with labour, the child's head was compreffed to a vaft length, and fo puffed, that I could not diftinguifh its true pofition; nor could I raife it fo as to examine higher up. Neverthelefs, as it was very low, I fuppofed that the ears were towards the fides of the pelvis, and having laid her in a fupine pofture, I introduced the forceps, infinuating one blade on each fide, as ufual. But the head ftuck fo faft that I could not move it lower; then I attempted to turn it to the right fide of the facrum, imagining the forehead might be to the left, as I had moftly found it; yet here alfo failing in my endeavours, I turned the other way, when it yielded with great eafe, and the vertex coming out below the pubis, the head was brought along, and delivered without further difficulty.

" One blade of the forceps was fixed before the left ear, and over the temple of that fide, and the other behind the right ear and lower jaw; the impreffion was deeper than ufual, but not fuch as to do any injury to the child."

Dr. Smellie here remarks, that in the two former cafes, he firft of all tried to move the occiput downwards, and turn the forehead back to the facrum, with one blade of the forceps. The following cafes were rendered difficult in confequence of a fmall or diftorted pelvis, when the child's head was low.

Case VII.—Dr. Smellie fays, " My attendance was befpoken to a woman who had before loft a child, which was fuppofed to have been too large to pafs through the pelvis; for fhe was of a fmall make and ftature.

" In January fhe was taken in labour, when I happened to be engaged, fo that I was obliged to fend a midwife to attend her; and before I could fee her, the membranes were broken, the os uteri was largely open, and the head fqueezed into the middle of the pelvis, in form of a cone or fugar-loaf.

" The midwife had kept her moftly in bed to prevent her being fatigued, and I advifed her to continue in the fame fituation, until fhe complained of being weary of that pofition, and of violent cramps in her limbs. Then getting up, fhe walked about the room, and took her pains fometimes ftanding and fometimes fitting; though I defired fhe would not fatigue herfelf by walking or ftanding too long, nor force down, except when the pains were ftrong. In this cautious manner fhe was managed all night, during which fhe refted at intervals upon the bed, until fhe was compelled to rife by the violence of the cramps that feized her as fhe lay; and, as I examined every now and then, I found the head advance by little and little, every third or fourth pain, which was ftronger than the reft. At fix in the morning the vertex

was preſſed down to the lower part of the pelvis, below the right iſchium; but at eight, it had made no further progreſs, though it was ſqueezed to a great length, and the parietal bones rode one another. By this time the patient was very much fatigued, her pains were become weaker, and at ſmall intervals ſhe was ſubject to reachings, which, however, ſupplied the defect in the labour-pains, by forcing the head ſo low as to protrude the perinæum and adjacent parts, in form of a large tumor. I waited ſome time, in hope that this extraordinary aſſiſtance would deliver the child; but the patient being ſuddenly ſeized with a fainting fit, I thought it was high time to have recourſe to a more effectual expedient, and the child's left ear being to her left groin, and the forehead at the left ſide of the ſacrum, I moved her breech to the bed-ſide as ſhe lay on her left ſide, introduced the forceps along the ears, and in that manner ſafely delivered the woman of a living child, which had been retarded by the ſmallneſs of the pelvis, though it was not at all diſtorted."

Case VIII.—" I was called," ſays the doctor, " by a midwife to a woman of a ſmall ſtature, about ten in the morning, when I found the vertex at the lower part of the left iſchium, and the head ſqueezed into a longitudinal form, as in the preceding caſe: as for the waters, they had been draining off for ſome time before I arrived.

" The patient being pretty much exhauſted, was put in bed; and, as ſhe had been ſeized with a looſeneſs at the beginning of labour, and enjoyed no ſleep the preceding night, I preſcribed an anodyne mixture of tinct. opii gut. xv. & ſyr. papav. alb. ℥iij. in aq. ſimp. ℥vſs. of which ſhe took too ſpoonfuls immediately, to be repeated occaſionally until reſt ſhould be procured. This preſcription had the deſired effect; and next morning about eight, I was called, and informed, that although the pains had been ſtronger, the head was very little advanced. I now felt the vertex had made ſome progreſs; the occiput was turned below the pubis, and the forehead to the ſacrum, though not ſo low as that I could aſſiſt with my fingers in the rectum, or at the ſides of the os coccygis. The pains were likewiſe become weaker, and the patient's ſtrength began again to fail. The child's ears being by this time to the ſides of the pelvis, and nothing wanted but pains to promote the birth, I directed her to be placed in a ſupine poſition on the bed, and with the forceps delivered her of a dead child.

Case IX.—" I was called by a midwife to a woman who had been ſickly from her infancy, and very much diſtorted. The membranes had been broken, and the waters diſcharged, ſeveral days before ſhe was in labour, and the midwife, who had attended her ſince the preceding morning, aſſured me ſhe had been in ſtrong labour for four-and-twenty hours. I found the vertex pre-

ſenting, the mouth of the womb fully opened, and the head down to the lower part of the pelvis; but when I introduced a finger betwixt it and the pubis, I could not reach ſo high as to feel the ear, nor could I diſtinguiſh by the ſutures the right ſituation of the head. Nevertheleſs, the patient being weak and low, I directed her to be laid acroſs the bed in a ſupine poſition, and introducing the forceps at random, by the ſides of the pelvis, tried by gentle efforts, during every pain, to bring the head lower down; but finding I could not move it without uſing ſuch violence as might be prejudicial to the mother and child, I withdrew the inſtrument, and reſolved to wait a little longer; and, as the patient had ſlept but very little for two nights, and was much fatigued, I preſcribed an anodyne draught, by which ſhe procured reſt and was refreſhed. Then the pains returning, and forcing down the head, ſo as to protrude the external parts, I received another call, and found the back part of the neck at the pubis: from this circumſtance, I knew the forehead was in the hollow of the ſacrum, and that the ears were to the ſides of the pelvis; I therefore, after having allowed her to take a few pains, which were weak, conſidered, that as the head was ſo low down, the aſſiſtance of the forceps might prove effectual in helping it along; ſo having placed her in the poſition deſcribed above, I introduced them along the ears of the child, and by pulling gently, during every pain, delivered the head, which was ſqueezed to a great length: but the os externum was ſo rigid, that half an hour elapſed, before it could be dilated ſo as to let the head paſs, without laceration.

" After delivery, I introduced a finger into the vagina, and found the pelvis ſo diſtorted, from the jetting forwards of the upper part of the ſacrum, that had the child been large, its life could not poſſibly have been ſaved. The head was of a lengthened form, and contorted to one ſide, and there was a deep impreſſion above the ear. The forceps too, when firſt fixed, had impreſſed the forehead, though the mark diſappeared in five or ſix days: but they made a very inconſiderable impreſſion, when they were fixed the ſecond time along the ears."

Case X.—A midwife called Dr. Smellie to a woman, whom ſhe had formerly delivered of a dead child; and ſhe ſaid, ſhe had on that occaſion felt an uncommon bump backwards.

" When I examined her," ſays the doctor, " the membranes were broke, and the child's head was ſunk down to the middle of the pelvis, where it was retarded by a jetting-in at the middle of the ſacrum; for, inſtead of feeling it concave, I found a prominence, as if one of the bones in the middle had been puſhed before the reſt; and the vertex of the child ſeemed to be preſſed down in a flattened form, by the woman's pains, which were ſtrong and frequent.

"I was called about three in the morning, and prescribed some innocent things to amuse the patient and her friends, who were extremely anxious, and went away, after having desired that she might not be hurried about or fatigued. I received another summons about nine, when I found the vertex squeezed down to the lower part of the pelvis, the woman exhausted, and her pains abated. As I at that time imagined, with others, that in labours, the forehead was mostly to the sacrum, and the ears to the sides, I caused the patient to be laid across the bed on her back, and applying the forceps along the head, at the sides of the pelvis, tried during every pain to help it along, that the child might not be lost. As the resistance was great, I gradually increased the force, and though the forceps slipped several times, I at last delivered the head, by grasping the handles more firmly, and pulling up towards the pubis. But the perinæum was torn by the sudden delivery, because I did not then know how to make the proper turns, and proceed in the slow and cautious manner which I have since adopted. The child's head was squeezed into a longitudinal form, flattened on the sides, with a deep impression on the cranium above the ears; and from an indentation on the os frontis, by a blade of the forceps, which had been fixed on that and the occiput, I discovered, that the ears were not to the sides, as I had imagined.

"These impressions had very much galled and inflamed the parts; but, in consequence of proper care, they digested, and the child recovered, and, as he grew up, the marks diminished and disappeared. I told the midwife and nurse that the patient's perinæum had been injured, but desired they would not make her uneasy, by informing her of an accident which would be attended with no bad consequences. Accordingly, the parts were perfectly healed in the space of twenty days."

Case XI.—A midwife demanded Dr. Smellie's assistance in behalf of a woman, whom she had once before delivered, with difficulty, of a dead child in the eighth month. "In this labour, the membranes were no sooner broken," says the doctor, "than I received a call, and found the pains strong, the child's head advanced to the middle of the pelvis, and the vertex gradually descended to the lower part of the ischia, which seemed remarkably near to one another. The head being luckily small, and the occiput to the left ischium, I resolved, after having waited a considerable time, to turn the forehead backwards to the os sacrum, on the supposition, that the narrow part of the head would more readily pass between the ischia. Thus determined, I kept the patient on her side, and applied one blade of the forceps at the pubis, and the other at the sacrum along the child's ears, and with great difficulty turned the forehead to the sacrum; but before I could deliver the head, I was obliged to alter their position, fix-

ing one behind the left ear, and the other before the right ear, backwards, at the right ſide of the ſacrum."

Dr. Smellie attended in another caſe of this kind, in which he was obliged to open the child's head, on account of its large ſize.

Case XII.—This was communicated to Dr. Smellie by a correſpondent. The membranes had been broken, and the woman in ſtrong labour for more than twenty hours, and was weak from being over-fatigued. After ſhe had taken a few pains, he found the head did not advance, and conſidered, that although it was high, yet it might be dangerous to wait longer, on account of the patient's weak condition. In puſhing up his hand into the vagina, he found one ear backwards, and above the upper part of the ſacrum, which projected conſiderably forwards, with the laſt vertebra of the loins. The head felt alſo very large, and the forehead was to the right ſide; he introduced the blades of the ſhort forceps, that were covered with leather; but being afraid that the handles were too ſhort, he brought theſe out, and introduced a long kind uncovered, which was the kind he had uſed on former occaſions. After he had fixed theſe properly, he tried ſeveral times, in vain, to bring the head lower. Upon which he reſolved to give up that method and open the head. Finding, however, that the forceps did not ſlip, but kept a firm hold, he reſolved to try and make one effort more, and after pulling with all his ſtrength, and moving the handles of the forceps over the pubis, he got the head delivered; yet not without bending backward that blade of the forceps that was next to the pubis. She was thus delivered of a dead child about noon. In the evening ſhe ſeemed to be in a good way, and in a breathing ſweat. Next morning ſhe was attacked with a violent looſeneſs, which was reſtrained with opiates, but that evening ſhe was comatous, and expired next morning: he ſuppoſed the laſt bad ſymptom was occaſioned by their giving her, without his knowledge, half a pint of rum at two draughts.

As the writer deſired Dr. Smellie's opinion of this melancholy caſe, he obſerved that he had contrived the forceps with ſhort handles, on purpoſe that too great force might not be uſed; and he ſays, when theſe are not ſufficient, he would open the head and extract with the crotchet. He adviſes his correſpondent to conſider how much the ſoft parts of a woman muſt ſuffer, by the bending ſo ſtrong an inſtrument againſt them, as the blade of the forceps; and ſays, if he had been called in time to prevent the woman's being over-fatigued till the head came lower, there might have been a chance of ſaving the child. "When the pelvis is narrow," ſays he, "and the head large, and ſo high that you cannot or dare not turn the child, and the woman in danger from extreme weakneſs, it is right, firſt, to try the forceps: but when you find it

won't come along with a moderate force, the crotchet muſt be uſed; for we ought never to endanger the life of the mother to ſave the child."

Case XIII.—Dr. Smellie met with a caſe of the ſame kind as the laſt, but not ſo difficult. "The membranes," ſays he, "were broken many hours, and the head was forced into the middle of the pelvis. An accoucheur was ſent for, tried the forceps, but having no aſſiſtants to hold the woman firm, did not ſucceed; then he ſent for me, and I was allowed to carry along with me four pupils. The ears were to the pubis and ſacrum, the forehead to the left ſide, and the upper part of the os ſacrum jetted in forward. As I could not turn the forehead with my hand a little backward, or paſs the blade of the forceps along the ear at that part, I introduced it behind the ear at the ſide of the os ſacrum, and the other at the fore part of the pelvis, towards the left groin, and before the other ear, ſo that the forceps was fixed diagonally on the head, and the ſame as to the pelvis. I uſed a good deal of force, by which I delivered the head, taking care to make the ſeveral turns in extracting it. The child had been dead many hours, the head was large, and ſqueezed of a very long figure; and the parts of the woman very much ſwelled. She was attacked with a violent looſeneſs, which was reſtrained by proper remedies, and ſhe recovered ſlowly. When the parts are inflamed and much ſwelled, the lochia ſometimes are obſtructed and fall upon the inteſtines; eſpecially, if the patient has been exhauſted by a tedious labour."

Case XIV.—This Dr. Smellie received from a gentleman at Boſton, in Lincolnſhire. The labour went on in a ſlow manner, and by waiting patiently, the head, after many ſevere pains, was forced down into the pelvis. As the woman lay on her ſide, he introduced one blade at the pubis, and the other at the ſacrum, and pulled with conſiderable force during every pain: but the forceps ſlipping, he was obliged to introduce them again as before; and, giving the forehead a turn backwards, the child was, in two pains more, delivered.

The ſame gentleman ſent two other caſes of women who had been long in labour with their firſt children: the ears were towards the pubis and ſacrum, and one of the women was very fat, and about forty. He delivered both caſes ſafely with the forceps, after finding the pains were going off, and the patients growing weak.

Case XV.—In this caſe the gentleman attending ſeems to have been too much in a hurry. After uſing great force, he delivered the child, which was alive; but the head was much galled with the blades, and the woman was carried off in a few days by a purging.

In another caſe, the ſame gentleman tried to deliver with the

forceps when the vertex presented, and the forehead was to the pubis; as he was not able to raise the head, so as to turn the forehead backwards, he pulled it along as it presented: finding that as the vertex pushed out the perinæum, it was beginning to tear, he took off the forceps, and the head was afterwards delivered with the labour-pains, and both mother and child did well.

CASE XVI.—In the Medical Journal, the following case of difficult parturition is published by Mr. Purton of Alcester, with remarks by Dr. Clarke of London.

"Mrs. P. a hard-working woman, about six-and-thirty, has been the mother of four children. Her two first labours were very severe and lingering, the last more so than the first; as, in the former, the child was born by the natural pains, and in the latter, with much difficulty, by the forceps. The third labour, she had lingering pains for three or four days, and I was with her for most of the time; at length the os uteri was fully dilated, and the membranes burst. The head, with the anterior fontanelle towards the left inguen, was distinctly felt at the brim of the pelvis. The pains now very soon increased in strength, and after a little time the head advanced somewhat further, but, at last, although I waited patiently many hours, it did not move in the least degree. Considering the presentation, and the head not being low enough for the application of the forceps, I desired a consultation, and therefore sent over for Mr. Bloxam's assistance. As soon as he arrived, he thought it proper to turn the child, which was done, and with the greatest difficulty the child was delivered, although I assisted him with all my strength; the head was nearly separated from the body in the attempt, and a considerable indentation was observable on the side of the head, after the child was born. On examination, there was a very considerable projection of the sacrum, so as to lessen that diameter of the pelvis full an inch and a half. The fourth labour happened about six weeks ago. The head, in this case, did not advance so far in the pelvis, although the pains were much stronger, and continued so for some time; at length the woman became so exhausted, that I thought it prudent to deliver her; but fortunately, during this deliberation in my mind, the funis was forced down, and it very soon ceased pulsating. When this took place, I did not hesitate a moment how to proceed; I immediately relieved the mother by evacuating the head; which operation, of course, I performed with much less violence to my own feelings when I was convinced the child was dead. It was with much difficulty I brought the child into the world, after I had diminished the head; and, on examination, the protuberance of the sacrum was much increased since the last labour, which shews that the bones must have been gradually becoming worse for many years; and also explains why the two first labours terminated so favourably." Mr.

Purton concludes by obferving, that the woman recovered more rapidly than many do in the beft of times. Dr. Clarke's obfervations are the following:

"The foregoing cafe," fays the doctor," appears to me to be worthy of being recorded, becaufe it ferves to fhew the gradual fteps of the difeafe, which is called *mollities offium*, and the manner in which the pelvis, though it may have been once perfect, becomes more and more diftorted, till it is abfolutely incapable of admitting the paffage of a child's head through it, without being diminifhed in fize by evacuating the brain.

"The firft labour was completed, as it appears, by the natural efforts. In the fecond, the head was brought through (not, however, without difficulty) by the application of the forceps. In the third, the head did not advance far enough to admit of the application of that inftrument, partly from the face being placed towards the groin, but principally, as is moft likely, from the increafing deformity of the patient's pelvis. The child, in this labour, was turned, and it was delivered by the feet. The head, however, was brought through, not without great force. Between the third and fourth labour the difeafe continuing to make progrefs, the deformity became ftill greater, fo that it was neceffary to deliver by the crotchet.

"I do not know that there is any inftance recorded in which mollities offium, once begun, has been by any means arrefted in its progrefs; the confequence of which is, that the pelvis, firft, for obvious reafons, and afterwards the whole fkeleton, muft give way to the fuperincumbent weight; and if parturition has been rendered difficult from this caufe, the difficulty may be expected to be aggravated in each fucceeding labour.

"Not fo in the deformity arifing from rickets. If the unfortunate fubjects of this difeafe attain the age of puberty, the fkeleton does not often yield afterwards to preffure. Hence the difficulty of parturition does not in them become increafed at each fucceeding labour, but the deformity remains where the difeafe left it, through life."

Laborious Cafes, in which the Vertex prefenting with the Forehead to the Pubis or Groin, the Patient was delivered with the Forceps.

CASE I.—Dr. Smellie fays, "I was called to a woman who had been long in labour after the membranes were broken. I found the vertex was down at the lower part of the pelvis; but the fcalp being much tumefied, I could not diftinguifh by the futures the real pofition of the head. The woman being much exhaufted, the pains weak, and the head low, I thought it was proper to affift the delivery, to prevent her and the child from being in danger. For that end, I caufed her to be placed in a fupine pofition, and during every pain, dilated the os externum, raifed

the head above the brim of the pelvis, and introduced my fingers and hand flattened betwixt the head and facrum, where I felt the back part of the neck, which informed me that the forehead was to the pubis. Confidering that the difficulty or obftruction of the delivery proceeded only from the wrong pofition of the head, I firft tried to turn the forehead towards the back part of the pelvis, and, failing in the attempt, from the flipperinefs of the fame, I endeavoured to bring the child footling: failing in this effort alfo, from the ftrong contraction of the uterus, I withdrew my hand, and applying the forceps along the ears, ufed a good deal of force to extract the head as it prefented. I brought it fo low that I felt the fontanelle one inch or more below the pubis; but could not bring it further, unlefs I had torn the vertex through the perinæum and anus, which were now greatly ftretched. Then I difengaged and brought down the forceps, and introduced a blunt hook, that had a round button on the end for that purpofe, up along the fide of the head, and above the chin. With this hold, I pulled down the forehead and face below the pubis, and then delivered the child. This was, at that time, the common method, when the head was large, and fqueezed to fuch a length, as to prevent the forehead's coming out, either with ftrong labour or the forceps; but the bad confequences that might enfue both to mother and child, made me afraid to continue in this method of practice. For the perinæum was commonly torn, and that part of the child was fometimes fo much bruifed, as to produce a violent inflammation, which deftroyed the child; but a lucky incident which happened the year following, gave me the hint of a better method, as in the following cafe."

CASE II.—"A midwife called me," fays Dr. Smellie, "to a woman, in the morning, who had been moft of the foregoing night in ftrong labour. I felt the vertex at the lower right fide of the facrum. Her pains were ftill pretty ftrong, although fhe had loft, both before and after the membranes were broken, a large quantity of blood. I found alfo the fontanelle at the left groin, which affured me, that the delay of the delivery proceeded from the forehead's being at that part. The patient being properly placed, I introduced the forceps along the ears, holding the handles, when fixed, towards the vertex, which was to the right fide of the os coccygis. Then I began to pull from fide to fide, by which means the head advanced a little, but not fo much as to allow the forehead to turn out below the pubis. In repeating thefe efforts, the forceps flipped off three times; though I did not obferve, till afterwards, that one of the blades, by giving way, was the occafion of their flipping off the head. As I found I could not deliver the head, by pulling either downwards to bring out the forehead, or upwards, becaufe the head would not yield that way, on account of the chin's being preffed againft the breaft, neither did I choofe

to try the blunt hook, becaufe of the bad confequences attending that method. I was alfo averfe and loth to deftroy the child by opening the head. While I paufed a little, confidering what method I fhould take, I luckily thought of trying to raife the head with the forceps, and turn the forehead to the left fide at the brim of the pelvis where it was wideft; an expedient which I immediately executed with greater eafe than I expected. I then brought down the vertex to the right ifchium; turned it below the pubis, and the forehead into the hollow of the facrum; and fafely delivered the head, by pulling it up from the perinæum and over the pubis. This method fucceeding fo well, gave me great joy, and was the firft hint, in confequence of which I deviated from the common method of pulling forcibly along, and fixing the forceps at random on the head: my eyes were now opened to a new field of improvement, on the method of ufing the forceps in this pofition, as well as in all others that happen when the head prefents."

Case III.—Dr. Smellie, with his pupils, attended a woman in Drury-lane. The membranes had broken in the evening, and fhe had frequent and ftrong pains all night. When they fent for him in the morning, he felt fomething like the vertex down at the lower part of the pelvis; but they were all miftaken as to the pofition of the head; "for," fays the doctor, "I, as well as my pupils, imagined, that, as the head was fo low, the forehead muft be turned back to the lower part of the facrum; and that on account of the head's being fqueezed to a great length, we could find neither neck nor ear at the pubis. We were likewife miftaken as to the futures, fuppofing, what was called by the ancients, the back fontanelle, where the lambdoidal croffes the end of the fagittal, was the fore fontanelle, which was backwards towards the facrum. I told all prefent, that as the head was fo low down, and the delivery retarded by the weaknefs of the pains, it was fafer for both woman and child to deliver her with the forceps; efpecially as I was pretty certain of fucceeding, without doing injury to either, being certain, as fhe had formerly quick and eafy labours, that the impediment proceeded only from weaknefs, and perhaps a larger child than ufual, which might be in danger of being loft by longer delay. I had her then put in the fame pofition, and applied the forceps in the fame manner as in the afore-mentioned cafe. I then pulled gently every pain, and the woman being expofed to fhew the operation, I was furprifed to fee, what I imagined the occiput, come along from under the pubis, not with hair, but bald and fmooth. Introducing my finger, I now plainly perceived, that we had been all miftaken as to the pofition; for I felt the root of the nofe, and eye-brows within the pubis. As the head was now fo far advanced, I thought it would be better firft to try to bring it along in that manner: therefore, I continued to pull

along gently; but inftead of pulling upwards as before, to raife the head from below the os pubis, I pulled downwards, to bring the forehead and face out from below that bone: they accordingly flipped out gradually, and when the chin was delivered from below the pubis, I turned up the handles of the forceps towards the face, pulled the head upwards, and delivered it according to the directions laid down in thofe cafes where the face prefents. The woman was not torn, the child's head was fqueezed to a great length, but was neither hurt nor marked with the forceps."

CASE IV.—The doctor was called to a patient by a midwife, who informed him that fhe had delivered the woman feveral times, and her labours were commonly tedious from her having large children; but that this was worfe, and more tedious than any of the former; for although the waters were a long time come off, and the head had been low in the bafon for many hours, fo that fhe expected every pain would deliver the child, all endeavours had proved ineffectual, and fhe had fent for affiftance, becaufe fhe was afraid of lofing both mother and child. "She alfo told me," fays Dr. Smellie, "that fhe imagined the head did not prefent right, for fhe found the opening at the fhare-bone, and imagined this was the occafion of the difficulty. On examining, I found it as fhe had related, and was much pleafed with the midwife's honeft behaviour, and fagacious remark. I felt alfo the vertex backwards, pufhing outward the os coccygis and fundament. Although the pains were much abated, and weaker, according to the midwife's account, yet every now and then fhe had one pretty ftrong. As I found her pulfe rather low and funk, I ordered her a cordial mixture, and waited with patience to try if the head would advance further, that the forehead and face might, by that means, be pufhed out below the pubis; but finding it did not advance, and that the pains were not fufficient, I thought it was proper to ufe the affiftance of the forceps. I then had her placed as in the former cafe, opened the os externum gradually with my fingers, fcooped up the head above the brim of the pelvis, and as I flipped my hand flattened betwixt the facrum and the child's head, I felt with my fingers the back-part of the neck, which more fully confirmed the midwife's opinion and mine, of the forehead's being towards the pubis. After I had brought down my hand, and found no advantage from feveral following pains, I introduced the forceps along the ears, having fixed them, and preffed the handles as far back as the perinæum would allow; and tried to bring the forehead and face below the pubis, by little and little, every pain, but did not fucceed. Thus difappointed, I pufhed up the head with the forceps to the brim of the pelvis, turned the forehead to the left fide thereof, and brought the vertex down to the lower part of the right ifchium; then turned the forehead backwards to

the concave part of the ſacrum, the occiput below the pubis, and delivered the head and body as in the former caſe."

Thoſe caſes in which the vertex preſents with the forehead to the groin or pubis, happen but ſeldom. If the head is ſmall, it is commonly delivered with the labour pains, becauſe the external parts, viz. from the os coccygis to the frænum labiorum, will frequently ſtretch down ſo much as to allow the forehead and face to come out from below the pubis; and if the pains fall off, and the woman become low and weak, the forceps will aſſiſt where the pains are inſufficient. But if the head is large and ſqueezed to a great length, thoſe parts will ſeldom ſtretch ſo much as to allow the delivery to be performed in that manner, either with the pains or forceps, without the danger of tearing the perinæum, and even ſometimes the vagina and rectum into one cavity: beſides, if the head ſtops there a long time, the child is frequently loſt from the long compreſſion of the brain, excluſive of the danger from bruiſing and inflaming the parts of the woman: to prevent all which inconveniences, it is better to help in time, and deliver, if poſſible, according to the above method; eſpecially in thoſe caſes, where you cannot alter the wrong poſition with your hand, or one blade of the forceps, or turn the child, and deliver by the feet.

CASE V.—In this inſtance the woman had been in ſtrong labour for many hours, after the waters were diſcharged. As the os uteri was not ſufficiently open, the writer (a correſpondent of Dr. Smellie's) adminiſtered opiates from time to time, which refreſhed her much; but, after waiting a long time, and the woman growing weak, and falling into faintings, he tried to dilate the parts during every pain, and at laſt found, that what obſtructed the head's advancing, was no other than the forehead's being to the pubis. He then introduced and fixed the forceps along the ears, but could not move or alter the forehead to the ſide and back part of the pelvis; yet, by dint of pulling with great force, he, at laſt, delivered the head, as it preſented. The child was alive, and the mother recovered.

This gentleman gave an account of two other caſes, in which the head preſented fair; but as the women were much fatigued and weakened before he was called, he delivered each with the forceps, and ſaved the children as well as the mothers. One of the women was violently cramped in her limbs, when he introduced the forceps, and the other was attacked with a flooding.

Laborious Caſes of Women delivered by the Forceps, the Vertex preſenting, the Ear to the Pubis, and the Head higher in the Pelvis.

CASE I.—Dr. Smellie was called to a poor woman who had been deſerted by her midwife, ſo that he received but an uncertain account of the caſe. "I was told," ſays he, "in general, that ſhe had loſt a great deal of blood, and that her midwife had

fatigued and wrought on her very much. I found her pulſe very weak, her countenance pale, and cold ſweats on her extremities. The mouth of the womb was largely opened, the membranes were broken, the head was ſmall and down to the middle of the pelvis, the occiput to the left iſchium, and the ear towards the right groin. I was alſo told that the labour pains had all along been trifling, and had entirely left her, after the waters came off. As the flooding was moſtly abated, I ordered her to take ſome broth, or brown caudle, to ſupport or nouriſh her. Having ſent for thoſe who were under my inſtructions, we attended ſome time to ſee if the labour pains would return, but to no purpoſe. Being afraid of cenſure, if ſhe ſhould die undelivered, I thought it was proper to ſupply the place of the pains, by aſſiſting the delivery with the forceps, eſpecially as ſhe had formerly borne children, and the head was ſmall. The ears being to the pubis and ſacrum, I kept her on her ſide, and applying each blade of the forceps, brought down the occiput to the lower part of the left iſchium, and turned the forehead backwards to the ſacrum: then I delivered the head by turning the handles of the forceps forwards to the pubis, the thighs of the woman being kept aſunder by a thick pillow placed betwixt her knees; at the ſame time ſupporting the perinæum, with one of my hands, to prevent its being torn. Thus the patient was ſafely delivered of the child, and afterwards of the placenta; for though ſhe continued long weak, ſhe at length recovered. The child appeared to have been dead two or three days, the lips and ſcrotum being livid."

CASE II.—The doctor was called to a woman in Parker's-lane, who, as the people about her alleged, had been in labour eight days: they ſaid, three midwives had attended and left her; that ſhe was very poor, and in a ſtarving condition. "I found," ſays Dr. Smellie, "the head of the child, in time of a pain, puſhed down with its vertex to the lower part of the left iſchium, but after the abatement of the pain, which was very weak, it was retracted to the upper part. As this was in the middle of the day, I ſent for ſome broth and bread from a cook's-ſhop, in order to refreſh her. I found, by her own relation, that the midwives had all tried to deliver her by hurrying and placing her in different poſitions: that ſhe had got little or no ſleep for two nights: that the waters came off the preceding day, and her pains had never ſince been ſtronger. Her pulſe was weak and low; but, on taking a little nouriſhment, ſhe recovered ſome ſtrength. After having ſent for thoſe who were under my inſtructions in midwifery, I left her to the care of one of the elder pupils; adviſing him to keep her quiet in bed, and to give her from time to time a little broth or brown caudle; for although I found the caſe was ſuch, that I could deliver her with the forceps, yet I thought it was better to try if ſhe could be delivered by the labour pains, which I

hoped would grow ſtronger, after ſhe ſhould have enjoyed ſome refreſhing ſleep, and her ſtrength ſhould be recruited by nouriſhment. I was called again, about one o'clock next morning, when I underſtood ſhe had every now and then ſlept betwixt the pains, which recurred at long intervals, and were ſtill weaker than I expected, conſidering that her ſtrength and ſpirits were much recruited. I found the head was in the ſame ſituation, and ſtill drawn back as before. After examining more narrowly, I could eaſily feel one of the ears at the pubis, the fore part of it being upwards and towards the right ſide. Perceiving the head was not large, I told the attendants, that the delivery ſeemed to be retarded by the contraction of the uterus before the ſhoulders, and the weakneſs of the pains, which had not force ſufficient to overcome that reſiſtance: that I did not queſtion, as ſhe was now ſtronger, they might in time be ſufficient, without any other aſſiſtance; but I thought it a pity to keep her longer in ſuch a ſituation, as I could eaſily aſſiſt with the forceps, by pulling along the head by little and little every pain, and preventing it from being afterwards retracted. Accordingly, I kept the patient on her ſide, until I applied the forceps, then tied the handles together with a fillet, and turned the patient on her back. Theſe previous ſteps being taken, I pulled gently during every pain, until I brought the head a little lower, and could turn the forehead from the right ſide of the pelvis to the ſacrum: after this change was effected, I continued to aſſiſt and bring the head lower; and the parts below were gradually puſhed out with the head in form of a large tumor. This being the woman's firſt child, the frænum felt very rigid, and was ſtretched with difficulty, and the perinæum, and parts about the fundament and os coccygis, felt ſtill very thick. As I continued to keep down the head, and aſſiſt by pulling during every pain, theſe parts were more and more ſtretched, and became thinner; and the os externum was at laſt ſo much dilated, as to allow the head to paſs and be delivered, as deſcribed in the laſt-cited caſe: but more than half an hour elapſed after the head was brought low down, before the os externum was ſo much dilated, that I durſt venture to pull up the head from the perinæum, which I was afraid, every time I pulled, would crack and give way; for, it was now as thin as a piece of parchment at the edge, and was lengthened to more than three inches."

Case III.—" I was called about ſeven in the morning, to a woman near the Seven-dials. The midwife told me, that when ſhe was called the preceding evening, ſhe had found her in pretty ſtrong labour pains; that, about twelve, the waters came off, immediately after the diſcharge of which, the patient was thrown into violent convulſions, which went off and returned three or four times; and ſhe had dozed and lain ſtupid betwixt the fits. I

examined, and found the head of the child lying much in the position described above, only the head was lower down, and the occiput to the under part of the right ischium. I could also plainly distinguish the lambdoidal crossing the end of the sagittal suture, the head squeezed to a longish form, one of the parietal bones riding over the other, and the fontanelle up to the middle of the left ischium. During the time of my examining, she was thrown into a fit, which lasted near a minute, and acted much the same as a labour-pain, by pushing the head a little lower, though it returned gradually to the same place, as the violence of the convulsion abated. The midwife had not observed this circumstance in time of the former fits, but told me, that it had continued in that position, without advancing, for two or three hours. As the woman's pulse was quick and full, I ordered her immediately to lose eight ounces of blood, and desired the midwife to send for me, if the convulsions should return, and the delivery be much longer delayed. The woman was now quite insensible, and did not seem to answer or take notice, even when we called to her aloud. I was again sent for about nine, when the midwife informed me, that the fits had returned oftener, and with greater violence. I found the head in the same position, but about an inch lower, and I now could feel the ear at the pubis. I tried to stretch the os externum gradually, every now and then, to see if it would bring on a labour pain, but to no purpose. In about twenty minutes, she was attacked with another fit, which was very violent, continued longer than the former, and had much the same effects. I then considered, that although it was probable, the repetition of these fits might act in the same manner as labour pains, and deliver the child; yet the continuance of them might still more and more endanger the life of the woman. Therefore I easily stretched the os externum as she lay on her side, and introduced the forceps, as in the former case; and as I found the head was large, I also tied the handles of the forceps, and turned her on her back. After I had brought the forehead to the hollow of the os sacrum, and was beginning to deliver the head in a slow manner, she was attacked with another fit, and as the os externum easily yielded, she was safely and soon delivered. The fits did not return; she fell into a plentiful sweat. The stupidity gradually wearing off, she next morning recovered her senses, and was agreeably surprised to find herself delivered, and the child alive."

Case IV.—"I was sent by a relation to see an unfortunate woman, who was pretty old, and in labour of her first child. She was in a low and weak condition, partly from grief and anxiety, and partly from having been excessively fatigued by the midwife, who wanted to hurry over the labour as soon as possible. The membranes had broken the preceding day, and it was now about five in the morning. I found the head presenting, and down to

the lower part of the pelvis, though it had not begun to puſh out the ſoft parts in form of a tumor, I could not diſtinguiſh the poſition of the head from the futures, the hairy ſcalp being ſo much ſwelled. However, I judged that the forehead was to the left ſide of the pelvis, from feeling a part of the head preſſed ſtrongly againſt the lower part of the right iſchium, and ſloping upwards to the middle of the left: I could but juſt reach the tip of the ear at the pubis, with my finger, the head was ſo large, and ſo ſtrongly compreſſed againſt that bone.

"I was informed that the pains had been very ſtrong, though now they were weak, and recurred at long intervals. Her pulſe was ſunk, and ſhe was taken with faintings and ſickneſs at her ſtomach, which produced violent retchings. Theſe, however, ſupplied the place of labour pains, and aſſiſted the delivery by forcing down the head. To encourage theſe efforts, as well as to recruit her ſtrength, I directed her to drink every now and then a little warm wine and water; and in this manner ſhe proceeded for about an hour, when finding the head had made but ſmall progreſs, and being afraid that her ſpirits would fail, I thought it was moſt expedient to call in the aſſiſtance of the forceps. After having gradually dilated the os externum, as ſhe lay on her left ſide, I tried to introduce my finger between the head and the pubis, to the os uteri, in order to guide the point of the blade; but finding there was not room for both, and being afraid of hurting the bladder, I turned her on her back, ſo that ſhe lay in the poſition, and was ſupported in a manner deſcribed in a former caſe; but as the ſeaſon was very ſevere, I ordered a veſſel with hot water to be placed by the bed-ſide, that the warm ſteams might mitigate the cold, to which ſhe was more expoſed in this than in the other poſition.

"Having fully opened the os externum, I turned the back of my hand down towards the ſacrum, and raiſed or ſcooped up the head gently to the upper part of the pelvis; and now with my fingers I felt the right ear backwards, and the poſterior part of the neck at the right ſide; and diſtinguiſhed that the pelvis was not diſtorted, though the head was large and ſqueezed to a great length. Thus informed, I introduced one blade of the forceps, at the back part, before I withdrew my hand; then inſinuating the other at the left ſide, towards the left groin, I moved it gently to the ſpace below the pubis, and over the child's ear. The inſtrument being locked, I preſſed the occiput from the right iſchium with two fingers, while I gradually turned, as I pulled, the forehead backwards to the ſacrum, and delivered the woman with the ſame precaution I had obſerved in the ſecond caſe."

CASE V.—About twelve at night Dr. Smellie was called to a woman, by a midwife, who told him the patient had been two days in labour; that the waters had been diſcharged the preceding

day; that there was a crofs-bone, which prevented the child's head from coming along, and had been the occafion of her lofing two children before; and that, as the pains were grown weaker, and the woman was much fatigued, fhe had defired the relations to demand further affiftance. "I found the head," fays the doctor, "pretty nearly in the fame pofition as that defcribed in the former cafe, though higher up; but as I did not think the woman in great danger, and learned, from the different accounts, that fhe had been put too foon upon labour, and was over-fatigued, I defired fhe would lie quiet in bed, without forcing down, except when fhe was obliged by the pains. She complained of great pain at the juncture of the offa pubis, as well as behind, where the offa innominata join the facrum; and her pulfe being low, and the labour pains weak, I prefcribed the following cordial and anodyne mixture:

(No. 10.) ℞ Aq. Cinnam. ℥vfs.
Pulv. Caftor. gr. x.
Ammon. præp. gr. vi.
Syr. papav. alb. ℥fs. Mifce.
Sumat Cochlearia ij ftatim, et repet. omni femihora.

"In confequence of this prefcription, fhe lay quiet and flept between the pains, fo as to be much recruited by fix next morning, when I received another call. The head feemed to be but fmall, although it was fqueezed down to a conical and flat form. As fhe had formerly loft two children, I refolved to attempt the faving of this, efpecially as I could eafily feel the ear at the pubis. Having gently dilated the os externum, with my left hand, as fhe lay on her left fide, I raifed the head to the brim of the pelvis, and with my fingers felt that the whole obftruction proceeded from the projection of the upper part of the facrum, with the laft vertebra of the loins: at the fame time I felt the back part of the neck at the right fide.

"After I had withdrawn my hand, I waited fome time, to fee if the pains, which were but weak, would force the head lower down; but, finding it did not advance, I introduced one blade of the forceps at the right fide of the facrum, along the back part of the child's right ear, in order to avoid the projection of the laft vertebra of the loins, then infinuated the fecond blade before the left ear, at the left groin of the mother, and as I brought down the head I turned the forehead to the facrum. This alteration being effected, I unlocked the forceps, and fixed them over the ears, to prevent the child's head from being marked at the temples, and pulling flowly during every pain fafely delivered the patient of a living child."

Case VI.—In this cafe Dr. Smellie affifted in a fimilar way The woman was taken in labour, and began to flood violently

but the difcharge abated when the membranes broke, and the patient being weak, he delivered her pretty much in the manner defcribed in the preceding cafe.

CASE VII.—" My attendance," fays the doctor, " was befpoke to a woman, who had been ricketty in her youth, and was very much diftorted. The labour at firft proceeded in a gradual manner, the membranes pufhing down and dilating both the os internum and os externum, before they broke: but after the waters were difcharged, the pains ceafed for fome time. Upon examination, I found the pelvis was narrow and diftorted, and with my finger felt the projection of the laft lumbar vertebra: the pains, however, gradually returned and grew ftronger, and the child's head advanced flowly. I did not confine her to any particular pofition. I had been called at ten o'clock at night: the membranes broke about four in the morning: at fix in the evening fhe began to be very much fatigued; by this time the head was fqueezed into a conical and flattened form, down to the lower part of the pubis; and I found, by the futures, that the forehead was to the right ifchium. I now confined her to her bed, that fhe might not be over-fatigued, and fhe took her pains, lying fometimes on her back, and fometimes on her fide.

" About three o'clock in the morning, the head, fqueezed to a great length, had advanced to the lower part of the pelvis, where it was fo firmly locked, that I could not introduce my finger at the pubis, to feel the ear. But the patient being exhaufted and weak, I introduced the forceps in the manner defcribed in Cafe V. and tried to move the head fo as to turn the forehead to the facrum. Thefe endeavours proving ineffectual, I withdrew the inftrument, and waited till about fix o'clock, when the head was preffed a little lower down; then having recourfe to the forceps again, I fucceeded, and fafely delivered the woman, as in Cafes II. and V. yet fhe complained very much of the diftenfion and contufion of the parts. As for the child, it was dead, and its death in all probability occafioned by the long compreffion of its brain. Its head was fqueezed to a very extraordinary length; a circumftance from which I at firft imagined it was lower in the pelvis than it afterwards appeared to be."

CASE VIII.—A midwife, who had formerly attended a woman of a fmall fize, in a labour which had been very tedious from the difficulty in bringing along the head of the fœtus which was ftill-born, the head being compreffed to a prodigious length, and the woman's life greatly endangered; in order to avoid cenfure, and prevent as much as in her lay the bad confequences that might attend her fecond labour, had recourfe to Dr. Smellie's affiftance. He found the child's head pufhed down but a very little way into the pelvis, the forehead refting upon the left fide of the upper part of the os facrum, and the hind-head againft the right groin. He likewife felt the fagittal future running along, towards the

left of the os facrum; and the hairy fcalp of the fœtus very much tumefied.

"The patient being laid on her back," fays he, "and her breech brought to the bed's-feet, I opened the os externum flowly, and pufhing up my hand along the fide and pofterior part of the pelvis, felt the left ear of the child, by which I knew the forehead was towards the back, though a little to the left fide of the woman: I at the fame time felt the upper part of the facrum and loweft vertebra of the loins, projecting fo far forwards as to reach within three inches of the offa pubis. The pains being ftill pretty ftrong, I waited fome time, to fee if the head would advance, but it made not the leaft progrefs: the pains and patient grew weak, and the uterus was ftrongly contracted. As the former child had been loft by the long preffure on the brain, I refolved to try the forceps, and fhould that method prove ineffectual, as I feared it would, to open the head and deliver with the crotchet. Having, therefore, introduced the fteel extractors, which, on this occafion, I preferred to thofe made of wood, I fixed them along the fides of the ears, and pulling downwards, at firft, with a good deal of force, when I found the head defcend to the lower part of the pelvis, I turned the forehead into the hollow of the os facrum. fo that the hind-head came out from below the os pubis: then directing one of my pupils to prefs the flat part of his hand againft the perinæum, which was very much diftended, I raifed up the forceps, and pulled the head half-round, forwards and upwards, on the outfide of the pubis. I afterwards delivered the body of the child, which was of a fmall fize, and the lower parts were befmeared with meconium. One blade of the forceps had been fixed along the fore-part of the ear, and refted on the temple, while the other extended along the back of the left ear, to the cheek, and the impreffion which they made was very inconfiderable. As for the woman, fhe recovered much better than I could have expected. When I afterwards introduced my hand to deliver the placenta, it went up with difficulty, and I was then confirmed in the opinion, that the diftance between the projection of the lower vertebra of the loins and the os pubis did not exceed three inches."

Laborious Cafes from the Prefentation of the Forehead or Face, in which the Women were delivered by the Forceps.

CASE I.—Dr. Smellie was called by a midwife to a woman in Windmill-ftreet, who formerly ufed to have very quick labours; but this had been very tedious, from the wrong prefentation of the child's head. The midwife told him, fhe felt fomething like the eyes towards the patient's left groin. "When I examined," fays he, "in time of a pain, I found her information true, and that the forehead prefented, with the face to the left fide, and the fontanelle

to the right. In this ſituation I underſtood it had ſtuck for a long time without making the leaſt progreſs, although the pains had been ſtrong and frequent.

"While ſhe lay on her ſide, and took ſeveral pains, I conſidered the caſe at leiſure. As the pelvis was large, I reſolved, if poſſible, to alter the poſition of the head, and ſhould I fail in that attempt, to turn the child and bring it footling. But, after having dilated the os externum, ſo as to admit my hand, I found all my efforts ineffectual, either to raiſe the forehead to the left ſide of the pelvis, that the vertex might come down to the other ſide, or to return the head into the uterus, ſo as to deliver it by the feet; for the uterus was ſo ſtrongly contracted as to foil all my attempts.

"Thus baffled in theſe endeavours, I introduced one blade of the forceps along the left ear, at the pubis, and the other on the oppoſite part, at the ſacrum, and began to turn the face backwards to the left ſide of the ſacrum, that the vertex might come out from below the pubis; but recollecting that the vertex would be turned ſo far up between the ſhoulders, as to render the delivery difficult, I reduced the face to its former ſituation at the left ſide, and bringing the head by degrees lower and lower, very eaſily turned the face and chin to the ſpace below the pubis; then holding the handles of the forceps towards the patient's belly, delivered the child, whoſe forehead was raiſed in a conical form, while the back part of the parietal and occipital bones were ſqueezed flat. I tried with my hands to mould it into a better ſhape: but it had been ſo long compreſſed, that I could not alter the form."

CASE II.—"I attended," continues the doctor, "in a caſe where the face preſented. The waters had been ſeveral hours diſcharged, and the midwife told me that the head had ſtuck a long time in that poſition without advancing in the leaſt. When I examined, I found the chin to the lower part of the pubis, and the forehead to the os ſacrum. The patient being greatly fatigued, and the force of the pains very much abated, I reſolved to aſſiſt as ſoon as poſſible with the forceps, in order to deliver the child, which I knew to be alive; for in examining the ſituation of the head, my finger ſlipping into the mouth, I felt it move its tongue and lower jaw; though I did not mention this circumſtance to the mother, that ſhe might not be overwhelmed with anxiety, in caſe it ſhould be afterwards ſtill-born.

"The ears being to the ſides of the pelvis, I cauſed the patient to be laid ſupine acroſs the bed, and having gradually dilated the os externum, endeavoured to introduce the fingers of my right hand, to the os uteri, at the left ſide of the pelvis; but I could neither reach that part, nor raiſe the head to make more room for my fingers. Then I tried to inſinuate a blade of the forceps, between the head and my fingers, in an imaginary line with the ſcrobiculus cordis; but finding a conſiderable reſiſtance, and being afraid that

the blade would paſs on the outſide of the os uteri, I withdrew the inſtrument. However, after two or three trials, in which I kept the point cloſer to the head of the child, I effected my purpoſe, and introduced the other blade on the oppoſite ſide in the ſame ſlow and cautious manner. Then locking and tying the handles together with a fillet, I began to pull during every pain, and as I pulled with my right hand, I preſſed down the chin with two fingers of my left. The perinæum and parts below, were now puſhed out in form of a large tumor; the anterior part of the neck being brought down to the lower part of the pubis, I turned the handles of the forceps towards that bone, pulled the head upwards ſo as to raiſe the parietal and occipital bones from the back parts, and bring them ſlowly with an half-round turn upward through the os externum; and, at the ſame time, I kept my left hand firmly preſſed againſt the perinæum, in order to prevent its laceration. I afterwards delivered the body of the child, whoſe face was livid, and very much ſwelled, though the ecchymoſis went off as the tumefaction ſubſided. The form of the head, which was ſqueezed to a great length, I altered a little, by preſſing the vertex and forehead betwixt my hands."

Case III.—About nine o'clock in the morning the doctor was called by a gentleman who had formerly attended his lectures, to a woman in labour, and found the child's face preſenting. He told the doctor a midwife was employed to deliver the patient, but his attendance had been beſpoken in caſe any extraordinary incident ſhould intervene; that the caſe having turned out a preternatural poſition of the head, his aſſiſtance was ſolicited, and he had that morning made ſeveral unſucceſsful attempts to raiſe it into the uterus, and bring the child by the feet.

Upon examination, he found the face preſenting, about two thirds of the head down in the pelvis, which he concluded to be large, becauſe her former labours had been quick and eaſy, and the chin at the lower part of the right os iſchium. He therefore gave it as his opinion, that ſhe might be eaſily delivered with the forceps; but deſired another gentleman (who had been called in) to take his own way, if he thought of any better expedient. "Upon his declining the taſk," ſays Dr. Smellie, "I cauſed her breech to be moved to the fore part of the bed, as ſhe lay on her right ſide, and a pillow to be placed between her knees, which were held up towards the abdomen. Theſe previous ſteps being taken, I introduced the fingers of my right hand up the vagina, between the child's head and the os ſacrum, until I felt the os uteri, and inſinuated one blade of the forceps along the ear, holding the handle down towards the chin, that the blade might go up in a line to the vertex, which was above the brim of the pelvis to the left ſide. As the point paſſed the os internum, I withdrew my left hand, to allow room for turning the handle backwards to the perinæum, that I

might the more eaſily puſh the point forwards, and follow the convexity of the ſacrum. Taking hold of the handle with my left hand, I introduced the fingers of my right betwixt the pubis and the child's head, to the os uteri, and inſinuating the other blade betwixt the head and my fingers, gently puſhed it within the mouth of the womb: but as it met with ſome difficulty, I withdrew my fingers to give more room, and preſſing the point cloſer to the head, introduced it ſlowly and with great caution, that the bladder and os internum might not be bruiſed.

" Both blades being thus introduced in the ſame direction, and the handles locked together, I pulled gently, moving the head from ear to ear, until it was brought lower down into the pelvis, then with the aſſiſtance of two fingers preſſed above it, I turned the chin, and anterior part of the neck, forwards, from the lower part of the right iſchium, to the ſpace below the pubis; ſo that the forehead was at the ſame time turned from the left iſchium to the lower part of the ſacrum and coccyx: laſtly, I moved the handles towards the pubis, and delivered the woman of a child, whoſe face was ſwelled, and whoſe head was compreſſed like that deſcribed in the former caſe: the long compreſſion had rendered the arms paralytic for ſeveral days, though this misfortune was ſoon remedied by friction and embrocations."

CASE IV.—In about two months after the foregoing caſe happened, Dr. Smellie was called, by a midwife, to a woman in labour, and found the child's face preſenting, and ſo exceſſively ſwelled, that he at firſt miſtook it for the breech; but, on further examination, felt the mouth and chin towards the ſacrum, and the fontanelle at the pubis.

" The midwife told me," ſays he, " that the waters had been long diſcharged; that notwithſtanding a ſucceſſion of ſtrong labour pains, the head had made no progreſs for ſeveral hours; and that as the pains had greatly abated, ſhe deſired the relations to demand further aſſiſtance: at the ſame time ſhe gave me to underſtand that the woman's former labours had been quick and eaſy.

" Her ſtrength and ſpirits being exhauſted, I encouraged her with hope, and refreſhed her with a glaſs of warm wine; then directing them to place her in the poſition deſcribed in the ſecond caſe of this collection, I gradually dilated the os externum. This dilatation being effected, I introduced the fingers of my right hand between the ſacrum and the chin, and raiſed the head to the upper part of the pelvis, but found the contraction and reſiſtance of the uterus ſo great, that I could not poſſibly turn the child and bring it by the feet. I then introduced the blades of the forceps along the ears, holding the handles as far back as the perinæum would allow, that the blades being in a line with the middle ſpace between the umbilicus and ſcrobiculus cordis, might be nearer the vertex, and have a better hold of the head. Having locked the handles, I

endeavoured to bring the head lower down; but could not move it, then I tried to turn the chin, first to one side and then to the other; failing likewise in this attempt, I pushed up the head, moving from blade to blade, and turned the chin to the upper part of the left ischium; but as I again endeavoured to bring down the head, the chin stuck so fast that I was afraid of straining the lower-jaw, and obliged to push up the head a second time with the forceps. I now introduced two fingers above the chin, and pulling the forceps with my left hand, brought it down to the low part of the ischium, and turned it with the fore part of the neck to the space below the pubis; then standing up and pulling the handles towards the abdomen, delivered the head, which was greatly tumefied. Nay, after the body was delivered, the child lay a long time without breathing or giving any signs of life."

CASE V.—Dr. Smellie was called to a woman, who had been long in labour, and found the face presenting with the chin to the lower part of the sacrum, though a little to the left side; indeed, the face was so low down, as to protrude the parts of the woman in form of a tumor; and her pains were by this time much weakened. The weather being extremely cold, he allowed her to continue lying on her side, though a supine position would have been more convenient, and causing her breech to be moved a little over the bed-side, while her head and shoulders lay towards the other side, he introduced the forceps, as in the former case: but finding it impracticable to raise the head, he was obliged to pull it along in the time of every pain as it presented. The parts between the coccyx and os externum were gradually extended by the face and forehead of the child, and at last yielded, so as to allow the vertex to come out from below the pubis; then turning the handles of the forceps towards that bone, he delivered the woman safely of a dead child, which was, in all probability, lost by the long compression of its head in the pelvis.

Laborious Cases, in which the Head of the Child presented: and the Child was delivered with the Assistance of the Hand, Blunt-hook, or Crotchet.

CASE I.—"Early in the morning," says Dr. Smellie, "a midwife sent for me to a poor woman, and allowed me to bring one of my pupils as an assistant.

"The patient had been all night in strong labour, and, after the membranes were broken, the midwife also told me, that she suspected the head presented wrong, having found the fontanelle turned to the pubis.

"At first, when I examined, I was of her opinion, and imagined with her that this position retarded the delivery; but, on a second trial, and introducing my finger backwards towards the sacrum, I found a large open space also betwixt the bones of the head.

" Both the midwife and affiftant being fenfible of the fame, I told them, that the difficulty of the cafe was occafioned by the head's being dropfical, and fo much diftended, that it would not pafs, unlefs the hairy fcalp was forced out with the contained waters, or perforated, to allow their difcharge. The midwife faid, if that was the cafe, it would be proper to relieve the woman of her mifery as foon as poffible, efpecially as fhe appeared to be much exhaufted with the length of the labour, and had fainted feveral times.

" Having again examined in time of a few pains, and finding that the hairy fcalp did not pufh down, that the pains grew weaker, and the patient being feized with another fainting fit, I alfo thought it was wrong to delay the delivery any longer. The weather being warm, and the woman unprovided with cloths to fponge up the moifture, I had her laid acrofs the bed, with her breech a little over the fide, and, in time of a pain, introduced two fingers of my left hand into the vagina. Thefe I preffed againft the open fpace betwixt the bones of the cranium, then, with my other hand, introduced the points of the fciffars along my left, and betwixt the two fingers, to prevent their hurting the woman. The pain abating, I waited till another returned, and, when it was at the ftrongeft, I perforated the fcalp, by pufhing the point of the fciffars through the integuments. The water immediately gufhed out, about three pints, in a full ftream, into a two-quart bafon, which the midwife held to receive it.

" The head being thus emptied, was forced down into the vagina, and this being her firft child, it was, in a few pains more, delivered. During thefe, however, a pint more of water was fqueezed out, fo as to fill the veffel.

" As the pains were weak, I affifted, by pulling at the opening with my fingers. The child had been dead feveral days."

Case II.—" The fame midwife called me to another woman two years after, having, by her experience of the former cafe, found it was alfo a dropfical head, the bones of the cranium being feparated at a great diftance from one another.

" The woman had not found the child ftir or move for feveral days, and but very weakly for a week or two before; the membranes had broken the day before; the pains had been frequent and ftrong; but the head did not advance.

" In time of a pain I found the hairy fcalp very tenfe, and the os uteri fully open; when the pain abated, the bones of the cranium felt loofe, and eafily moved within the fcalp, which was a certain fign that the child had been dead for fome time, and that it would be wrong to keep the woman longer in pain.

" As fhe lay on her fide, I perforated the fcalp, as in the former cafe, and received the water on cloths laid below her for that purpofe. Although there was a large quantity difcharged, and the bones felt in a fhattered condition, riding over one another, yet

even after many ſtrong pains, they were only advanced to the middle of the pelvis.

" I then tried to aſſiſt, by pulling at the opening with my fingers; but that purchaſe not being ſufficient, I introduced the blunt-hook within the ſkull. With the aſſiſtance of that inſtrument and my fingers, I gradually extracted the head, and the body being ſmall, was eaſily delivered. The child appeared to have been dead ſeveral days, from the parts being livid, and the ſcarf-ſkin ſeparating on the leaſt touch.

" It is worth remarking, that, although the woman had the confluent ſmall-pox in the fifth month of her pregnancy, ſhe recovered, and went on to her full time: there was no mark of that diſeaſe to be found on the body of the child."

CASE III.—This was a laborious birth, from the large ſize of the child, and the ſmallneſs of the pelvis in the mother, who was delivered with the blunt-hook.

" I was called," ſays Dr. Smellie, " in the forenoon, to a woman, at ſome diſtance in the country, who had been ſeveral days in labour. She had been delivered twice before with great difficulty, although the children were ſmall, and before the full time.

" The midwife told me, that the waters were gone off two days, and although the pains had been very ſtrong, it was a long time before the head came down into the lower part of the pelvis. She had been in hopes that it would have been delivered every ſtrong pain, during all the foregoing night; but as the pains went off, and the woman was grown weaker, ſhe adviſed the friends to ſend for further aſſiſtance.

" On examining, I found the pudenda very much ſwelled, the head low in the pelvis, and a large tumor on the vertex, protruded through the os externum.

" The woman's pulſe was low, intermitting, and like one in a dying condition; her pains were alſo very weak, and returned at long intervals. I informed the friends of the great danger the woman was in, even if ſhe were delivered, owing to her extreme weakneſs, but told them, as a ſpeedy delivery was the only method to ſave her life, I ſhould do all in my power.

" As ſhe lay on her ſide, I tried to force up the head, to give more room in the pelvis for introducing a fillet over the vertex, but it was ſo low down, and firmly locked in, that I could not move it.

" This method failing, and as there was no time to be loſt, I opened the head with the ſciſſars, and introduced the blunt hook on the outſide of them; then I tried to deliver, by pulling that inſtrument with one hand, while, with the fingers of the other, I aſſiſted in the opening; but the hook loſing its hold, I introduced it on the other ſide of the head; and, as it did not give way as before, the

cerebrum was gradually diſcharged at the opening, as the head advanced; after which the child was ſoon and eaſily delivered.

"On examining the body, I was certain it had been dead many hours before delivery; for the lips and ſcrotum were of a livid colour. The firſt hold of the hook was on the back part of the neck; the ſecond was on the fore part, above the lower jaw.

"The ſwelled parts of the woman were turned black and livid, from which appearance I ſuſpected a mortification was alſo probably begun in the uterus, eſpecially as ſhe had complained of violent pains in the abdomen the night before; but they had been gone off for ſome hours, and therefore the aſſiſtants did not inform me of this circumſtance till after delivery.

"I was informed next day that the patient gradually grew weaker, became delirious, and died next morning. I am now pretty certain, from many examples ſince, that, if I had been called the day before, the woman would have been ſaved. I am alſo convinced, that, if I had known the uſe of the forceps, I ſhould not have been obliged to open the child's head, eſpecially as it was ſo far advanced, and the pelvis not diſtorted."

CASE IV.—"I was called to a woman who had been long in labour, and had not felt the child move or ſtir for twelve days, ſince which time ſhe had been thrown into great fear, by a fall from a horſe, and, on that account, the midwife ſuppoſed the child was dead.

"When I examined the caſe, I found the head of the child advanced to the lower part of the pelvis: the diſcharge on the cloths was of a browniſh colour, and had a ſtrong mortified ſmell: the patient was much exhauſted with the length of her labour, and her pains were weak.

"Having placed her in a ſupine poſture, I tried to turn, and bring the child by the feet, but could not raiſe the head above the brim of the pelvis. In making this effort, I was convinced, that the obſtruction of the delivery did not proceed from a narrow pelvis, or a very large head.

"With a good deal of difficulty, I introduced a fillet, in form of a nooſe, over the fore and hind parts of the child's head.

"This being effected, I pulled gently every pain, which did not however move or alter the poſition; this obliged me to increaſe the force, by which the fillet ſlipped from its hold.

"As there was no time to be loſt, I opened the head, and tried to deliver it as in the foregoing caſe; but not ſucceeding, I withdrew the blunt-hook, and introduced a ſtraight crotchet, by which the head was extracted, after uſing a good deal of force.

"On trying to deliver the body, I was ſurpriſed that I could not bring it along; and ſuſpecting the difficulty was owing to the bulk or monſtrous deformity of the child, I introduced the ſtraight crotchet along the breaſt, but it loſt its hold, after it had torn open the thorax.

" I again introduced the ſame inſtrument as high as the length of it would allow, and at laſt, with great force and labour, delivered the body.

" Upon examination, I found the difficulty proceeded from the belly's being greatly tumefied after death ; and that the crotchet, at the firſt trial, had only torn open the breaſt ; but by opening the abdomen in the ſecond effort, the ſwelling ſubſided.

" The fillet had galled, and torn part of the ſcalp from the occiput."

Case V.—The doctor was called, by a midwife, to a caſe of the ſame kind, in which he extracted the head with the forceps ; but not being able to deliver the body of the child, he was obliged firſt to tear open the thorax, and afterwards the abdomen. In this operation he found the curved crotchet ſucceed better than the ſtraight one.

Case VI.—" A midwife," ſays Dr. Smellie, " ſent for me to an acquaintance of hers, at one of the work-houſes, who had been five days in labour, and was neglected by the ſurgeon and midwife of the houſe.

" The midwife told me, that ſhe had been with her all night ; that ſhe had loſt a great deal of blood ; and that ſhe thought the child was dead, as the woman had not felt it ſtir for two days.

" On examining, I felt the head low down in the pelvis : but as ſhe was ſo very weak, I deſired the ſurgeon might be ſent for, who was not to be found.

" As there was ſtill more danger in delaying longer, I thought it a pity to refuſe giving all the aſſiſtance poſſible. I firſt tried to deliver with the forceps, but was ſurpriſed that I did not ſucceed, when I found the head was not large, the inſtrument ſo eaſily introduced, and firmly fixed.

" Not ſucceeding in the above method, I opened the head, and, in trying to deliver it with the aſſiſtance of my fingers and the blunt-hook on the inſide of the ſkull, I could not, with all my ſtrength, bring it along. However, by extracting the occipital and one of the parietal bones, I had room to introduce my hand, ſo as to find with my fingers the under part of the uterus ſtrongly girt or contracted round the neck of the fœtus. This I gradually dilated ; then bringing down one of the arms, and pulling at that, and the ſhattered bones and ſcalp, with both my hands, I at laſt extracted the child with greater eaſe than I expected.

" In puſhing up my hand to dilate, my fingers paſſed the mouth of the womb that was girt round the middle of the head, when I was ſurpriſed to find another contraction before the ſhoulders. This was the firſt time I obſerved that different parts of the uterus would contract ſo ſtrongly, eſpecially the under part before the ſhoulders ; a conſtriction which has been commonly aſcribed to the mouth of the womb.

"The woman recovered contrary to expectation, but was long in a weak condition. By the livid appearance of the lips and pudenda of the child, it was pretty certain, that it had been dead from the time the mother no longer perceived its motion in the uterus."

CASE VII.—"I was called to a case much of the same kind, only the head of the child was larger, and squeezed into a longish form; the woman was also stronger, and had not been exhausted with floodings; but, as she had been long in labour, the head low, and the labour pains quite gone off for several hours, I was afraid, if assistance was delayed, she would soon be in danger of her life.

"I first tried to deliver the head with the French forceps, recommended by Mr. Butter, in the Medical Essays of Edinburgh; but they were so long and ill formed, that I could not introduce them safely to take a proper hold.

"Although this case seemed very proper for the assistance of such an instrument, from the head's being so low; yet as I had not been used then to that method I did not repeat the trial, but attempted to deliver with the fillet, which, though firmly fixed, had no power to bring along the head, though I used a considerable force in pulling it.

"This method not succeeding, I waited some time, as the pulling the head with the lack had brought on some pains; but the woman growing weaker, and assuring me she had not found the child stir for seven or eight days, I thought it more than probable that it was dead, and the body so tumefied as to prevent the delivery.

"The woman and her friends being impatient, I thought it was wrong to run too great a risk of her life, and delivered the child, by opening the head, and extracting the body with the assistance of the crotchet. I could not deliver the head, even after the cerebrum and several bones of the cranium were discharged, until I had also opened the abdomen.

"The body of the fœtus was all over livid, and much swelled, so that it had certainly been dead the time the woman mentioned. She herself recovered, as if no such difficulty had happened."

CASE VIII.—"A midwife in Hamilton," says Dr. Smellie, "sent for me to a woman at some distance in the country, who had been in severe labour for twelve hours after the os uteri had been sufficiently dilated, and the membranes broken.

"On examining, I found the head still above the brim of the pelvis, and kept up there by the projection of the lowest vertebra of the loins, and upper part of the sacrum. This straitened the passage, which felt not above two inches and a half from these bones to those of the pubis. I advised them to keep her quiet in bed, to prevent her being fatigued, and give time for the head to

advance in a flow progreffion, as well as to keep up her ftrength by refrefhing fleeps betwixt the pains. Thefe directions had the defired effect: but having waited from morning to night, and finding the head was only fqueezed down a little, in a conical form, into the narrow part of the pelvis, I fent for another gentleman of the profeffion.

"After we had waited all night to no purpofe, obferving that the patient grew weaker; and that the head did not advance, we thought it advifable to attempt the delivery, rather than to wait longer, and run too great a rifk of her life. We alfo confidered that the pelvis was fo narrow, it would be impoffible to fave the child's life; and, if it was uncommonly large, it would be even dangerous to the life of the mother.

"Having placed her in a convenient pofition, and, in a cautious manner, opened the protruded fcalp (which was much tumefied), together with one of the parietal bones, with the fciffars, I introduced two fingers of my left hand, and tried to pull down the head in time of the pains, but finding that purchafe was not fufficient to move it, I introduced the blunt hook, firft within the cranium, but this not fucceeding, was withdrawn; then I introduced two fingers on the outfide of the head, at the right fide of the facrum, and, along the fame, the hook, with my right hand, to the upper part of the head. After refting a little, until a pain returned, and introducing again the fingers of my left hand into the opening, I began to pull; but finding this hold of the inftrument forced the head too much againft the pubis, I moved it forward toward the right groin, and then, with my fingers and the hook, pulled the head backward and down towards the lower part of the facrum, at the fame time defiring the woman to force down with all her ftrength.

"To prevent as much as poffible any injury to the parts of the woman, I repeated thefe efforts by intervals, which at laft brought along the head fqueezed in a long and flat form. This being effected, the body was delivered in a flow manner, but not without a good deal of force.

"On examining the child's head, I found the firft hold of the hook was above the ear, and the fecond, on the oppofite fide, above the under-jaw; the opening with the fciffars was made through the left parietal bone.

"My fingers and thumb had fo firm a hold, as to affift in pulling the head backwards from the pubis, while the force above, with the hook, made the bones collapfe, as the cerebrum was difcharged through the perforated part; but, although the head was fmall, it required a great deal of force to bring it through the narrow part of the pelvis.

"The woman recovered tolerably well, but did not live to have another child."

CASE IX.---" I was called, at three in the morning, to a woman who had been a confiderable time in labour, and felt the head of the child prefenting, about a third part of it being pufhed, in a longifh form, into a very narrow and diftorted pelvis.

" As the patient feemed to be in no apparent danger, and as both herfelf and friends were anxious to have her delivered, and could not be perfuaded to have more patience, I ordered a mixture to amufe them, and advifed the midwife not to fatigue her any more, but to keep her as much in bed as poffible.

" When I called again, in the afternoon, I found the head advanced a little lower, and the woman much refrefhed with reft and fleeps betwixt the pains. I ftill encouraged her to have more patience, and continue to take every now and then fome of the mixture.

" I was fent for again next morning, about two o'clock, and found her ftrength much exhaufted; her pains, which had been frequent and ftrong, were now feldom and weak; befides a fmall flooding began to come on.

" The head had not advanced lower, only the hairy fcalp was formed, by the long preffure, into a large tumor on the vertex, which prevented my knowing the exact pofition; but as it was ftill high in the pelvis, I judged one of the ears was towards the facrum.

" Although I was afraid that the woman could not be delivered with the labour pains, yet as fhe imagined fhe felt the motion of the child, I waited many pains, and tried if putting her in different pofitions would forward the delivery; but finding her fpirits flag more and more, and the flooding increafe, I began to be afraid of lofing the patient, if I longer delayed my affiftance.

" Having laid her in a proper pofition, as has been defcribed in page 211, Cafe III. and dilated the os externum, I forced up the head, to be more certain of its pofition; but could neither reach the ear nor back part of the neck with my fingers, without ufing more force, which I durft not venture to exert, on account of the flooding.

" However, this trial made me fenfible of the head's being fo large, that there was no hope of faving the child by turning, and bring it footling; and it was impoffible to deliver it with the forceps.

" To prevent further danger, I opened the head of the fœtus with the fciffars, and, in time of the weak pains, tried firft to deliver with my fingers and the curved crotchet, covered with its fheath within the opening; but although, in making different efforts, I pulled out the frontal, occipital, and right parietal bones, I did not fucceed, until the crotchet was flipt up on the outfide of the fhattered remains, above the under-jaw.

" As my fingers were cramped, I refted a little; after which untying and bringing down the fheath that covers the point of the inftrument, and finding it had a firm hold, I at laft brought out the head.

" Having wrapped a cloth round it, I made feveral trials to deliver the body, but could not move it with all my force, until I introduced the fame crotchet along the breaft and belly, and by opening thefe, as in the 4th cafe of this collection, I at laft effected the delivery, and indeed not without much fatigue.

" By the livid appearance of the child's body, the woman and friends were convinced, that it had been dead for fome time, and that the difficulty proceeded from the uncommon bignefs, as well as the tumefaction of the abdomen.

" This was the woman's firft child; I attended her in a fecond and third; her labours were tedious, and the children large, but, at laft, fafely delivered."

CASE X. In this the pelvis was narrow, and the child, which was large, was delivered with two crotchets.

" The child prefented much in the fame manner as the foregoing; fhe had pretty ftrong pains, and was every now and then attacked with fevere fits of vomiting; but as fhe was in no apparent danger, I ordered a few draughts with Sp. Mindereri.

" Being again called, and finding that the patient was growing weaker, and fhe being much fatigued with the vomiting that ftill continued, as well as the length of the labour, I firft tried to turn the child: but in pufhing up the head, I found it large, and the pelvis fo narrow that the child could not be faved by that method.

" I alfo found that the forceps or fillet could be of no fervice; however, I refted fome time, to obferve if, after ftretching the parts, they would allow more room for the head to advance lower; but finding no alteration, and fhe being attacked with faintings, I immediately opened the head, and tried to deliver with the blunt hook, as in the former cafes.

" This method not fucceeding, and as the forehead was at the left fide of the pelvis, I introduced one of the curved crotchets along the left fide of the facrum, above the under jaw; but finding that purchafe pulled the head againft the pubis, I introduced the other at the oppofite fide of the facrum, and moved it gradually over the occiput of the foetus, to the right groin of the woman.

" Finding that both the inftruments had a firm hold, and locking them together in the fame manner as the forceps, I began and pulled with greater and greater force, which brought down the head lower in the pelvis; but as it ftopped there, I unlocked the crotchets, and pulled by the one that was at the right fide, by which it was forced backwards towards the facrum, and delivered. Although I ufed all poffible caution, yet it required fo great force

at the laſt pull (this being the firſt child) that the perinæum was a little rent; but by the prudence of the nurſe, it recovered without the woman's knowledge."

CASE XI.—"I received a meſſage from a gentleman of the profeſſion, deſiring me to come and aſſiſt him to deliver a poor woman, and to bring two pupils with me, which the patient had conſented to, to make me ſome recompence for my trouble.

"He had been with her all night; her pains at firſt were ſtrong, which growing weaker, he tried ſeveral times to turn the child and deliver by the feet; but not ſucceeding, and being much fatigued, he had recourſe to my aſſiſtance.

"I alſo tried the ſame method to bring the child footling, turning the woman upon her knees and elbows, according to Daventer's advice, that the preſſure or force of the muſcles of the abdomen might be diminiſhed; but after ſeveral trials, I could not move the head ſo as to introduce my hand into the uterus.

"The face was much ſwelled; and the chin being to the ſacrum, I introduced the forceps along the ears at the ſides of the pelvis; but after ſeveral efforts, could not move the head lower, or alter the chin, ſo as to turn it to the groin or pubis.

"I afterwards tried to open the head with the ſciſſars at the os frontis which preſented at the pubis; but the bones were ſo thick, that I could not make an opening ſufficient to allow a diſcharge of the cerebrum.

"All theſe different methods failing, I introduced the two curved crotchets, one on each ſide, which tore open the bones of the cranium; then the contents were evacuated, the head was diminiſhed, and the fœtus delivered.

"The gentleman told me afterwards, that although the woman had ſuffered ſo much from the length of the labour, and from the violence of the delivery, yet ſhe recovered as if no ſuch difficulty had happened."

CASE XII.—"A midwife ſent from one of the courts at the Seven-dials for me, or one of my pupils, to aſſiſt her in delivering a poor woman there.

"When I arrived at the houſe, the midwife told me that the woman had formerly eaſy labours; and that ſhe at firſt imagined the breech of the child preſented, and had waited a long time till her patient's ſtrength began to fail; but at laſt ſhe found her miſtake, and that in place of the breech, the head preſented, and had ſtopped in that poſition for many hours; on which account ſhe had deſired further aſſiſtance to ſave the woman's life.

"I found the face much ſwelled, and the chin to the left ſide of the os coccygis. In trying to raiſe the head, to give more room for introducing a blade of the forceps, I felt it ſo firmly locked that it was impoſſible to move it.

"As I did not certainly know whether the child was dead, and

being defirous to fave it, if alive, I with fome difficulty introduced one blade of the forceps over the left ear at the left groin, and the other at the right fide of the pelvis of the woman, and right ear of the child. After trying feveral times to deliver the head with that inftrument, in time of the weak pains, and not fucceeding, and being afraid that the patient would lofe her life, if not foon relieved, I introduced the two-curved crotchet, and delivered her in the fame manner as in the former cafe.

" The head was fmaller, and not ftretched to fo great a length; it came eafily out below the pubes, without my being obliged, in the extracting, to turn the chin below the fhare-bone.

" The crotchets had made a large opening in each of the parietal bones near the vertex, which allowed the greateft part of the contents to evacuate, fo that the head was diminifhed, and came along with lefs difficulty.

" The woman complained afterwards of great pain, both at the facrum and pubes, which feemed to proceed from overftraining the ligaments of thefe bones; but by keeping her quiet, and promoting plentiful fweats, fhe at laft recovered."

Case XIII.—This cafe was laborious; the pelvis narrow, the head large, and delivered with the crotchet.

" A midwife called me," fays Dr. Smellie, " to a chairman's wife, who had been delivered four times by different gentlemen, who could not fave any of the children.

" On examining, I felt the head of the child above the brim of the pelvis, and kept forward over the pubes, by the jetting in of the upper part of the facrum, and the laft vertebra of the loins, which formed a very acute angle.

" Although the woman had been three days in ftrong labour, yet fhe feemed to be in no danger, and as fhe had got little fleep, I ordered her a draught with tinct. opii, gtt. xx. and fyr. papav. alb. ʒij. and defired fhe might be kept as ftill as poffible.

" Being called again next morning, I found the head advanced a little lower in the bafin, but as her pains were ftill good, and as fhe had got little fleep with the former draught, I ordered the fame to be repeated; and leaving one of my pupils with her, defired him and the midwife to fend for me if they found it neceffary.

" They fent for me about eleven at night, giving me notice that the patient had flept every now and then, betwixt the pains, which were ftrong; but as they were now abated, the woman much exhaufted, and no hopes of the delivery, they thought my affiftance was neceffary.

" Near half of the head was now fqueezed down in a flat form at the diftorted brim of the pelvis. By my encouraging the patient, and giving her fome warm wine, her ftrength and fpirits were recruited, and the pains grew ftronger.

"I attended ſeveral hours, in hopes that the head would advance lower, and that if not delivered with the pains, yet there might be a chance of ſaving the fœtus with the forceps; for it would have been impoſſible to have brought it alive by turning in ſo narrow a pelvis.

"Finding at laſt the woman and pains grew weaker, and that the head ſtill continued in the ſame poſition, the patient alſo begging to be relieved, and calling upon me if poſſible to ſave the infant, I thought it would be cruel to delay my aſſiſtance longer, and reſolved to do all in my power to ſave the mother and the child alſo.

"As ſhe lay on her left ſide, acroſs the bed, I gradually ſtretched open the os externum, and introducing the fingers of my left hand along the left ſide of the ſacrum, found the jetting in of the lower vertebra of the loins kept the bulk of the head forwards over the oſſa pubis; I perceived alſo the head was large and much oſſified, and that the os frontis was to the left ſide of the pelvis.

"Although I had ſmall hopes of ſucceeding, yet I tried if the child poſſibly could be ſaved by delivering with the forceps, and firſt introduced the ſhort kind; but the diſtortion of the pelvis prevented their taking a proper hold, and when I attempted to extract, they ſlipped off the head; then I introduced a longer pair that were bent to the ſide.

"As one of the ears was to the pubis, and the other above the projection of the diſtorted bones at the back part of the pelvis, I was obliged to fix one blade over the os frontis, and the other over the os occipitis, by which means I obtained a firm hold, as the bending of the forceps fitted the curvature of the ſacrum; but as the biggeſt part of the head was ſtill above the brim of the pelvis, it was not in my power to move it down from that poſition.

"Finding it was in vain to try this method longer, and being afraid leſt the parts of the woman ſhould be ſo bruiſed as to occaſion a mortification, I withdrew the forceps, and reſolved to uſe the laſt reſource, and moſt diſagreeable method, to ſave her life.

"As none of the ſutures preſented, ſo as to enable me to make an opening through one of them, I was obliged, with a conſiderable force, to make a perforation with the ſciſſars through one of the parietal bones, into which having introduced two of my fingers and a crotchet, I endeavoured to deliver; but not having a ſufficient hold, I withdrew the inſtrument.

"Having introduced my hand at the right ſide of the pelvis, and the crotchet up betwixt my fingers and the child's head, I fixed the point on the occiput, which was ſo much oſſified, that the inſtrument ſlipped, and could not penetrate ſo as to have a ſufficient hold.

"Recollecting, that as the forehead was to the left ſide, a perforation would be much eaſier made at the fontanelle and ſagittal

ſuture, I introduced my fingers and curved crotchet, with the ſame precaution as before.

" The laſt vertebra of the loins jetted in ſo much, that I was obliged to move the inſtrument more towards the pubis; the point turning a little to one ſide, I moved it again cloſe to the head, to prevent its hurting the patient.

" When I began to pull, the inſtrument began to ſlip, and the point again to alter, on which I advanced it much higher than before, and placed it right; then I began to extract firſt in a gentle manner until I found there was a firm hold; afterwards with much fatigue and force I delivered the head; although not before the frontal, parietal, and occipital bones were extracted. In this operation I was obliged to alter the crotchet ſeveral times, and the laſt fixing of it that ſucceeded was on the lower jaw.

" After reſting a little, and not being able to deliver the body with my hands, I was obliged to take the aſſiſtance of the crotchet to diminiſh the bulk of the body alſo.

" Thoſe preſent, as well as myſelf, were ſurpriſed to find that the woman recovered ſo well, conſidering the length of the labour, and the force that had been uſed before ſhe could be delivered."

CASE XIV.—In this caſe delivery was effected with the crotchet. It is deſcribed in a letter from a correſpondent of Dr. Smellie's.

" About a fortnight ago," ſays the writer, " a poor woman, come to her full time of a ſecond child, by accident received a fall, which occaſioned much uneaſineſs, but no ſymptoms of labour appeared till yeſterday about eight o'clock in the morning, when the membranes broke, and the waters diſcharged in great quantity. At three in the afternoon the pains came on pretty faſt; the midwife was ſent for, and, as ſhe ſays, finding things above her reach, ſent for aſſiſtance.

" I found, on examining, a large arm in the paſſage, and the head, which I thought alſo very big, preſenting with the forehead ſideways, but turned a little towards the os pubis. The pains had entirely ceaſed; I put her in a right poſition to try to turn the child. With ſome little difficulty I introduced my hand to ſearch for the feet, but found none near. My hand was very ſtrongly preſſed with a prodigious ſtricture and compreſſion of the parts; however, I got to the groin, and found the legs and feet extended up in a ſtraight line, ſo as I could not poſſibly reach them. I then returned to the head, and endeavoured to puſh it upwards; but the preſſure was ſo great againſt me, that I found it impracticable. I told them the difficulty, which the midwife likewiſe affirmed; and, being at a little pauſe, we propoſed calling a neighbouring ſurgeon. When he came, I told him every thing that had happened, and, after examining, concluded

that it was impoffible to deliver by turning. We then agreed, as it was uncertain whether the child was dead or not, to try one blade of the forceps, which I paffed up under the os pubis with fome violence; but receiving no advantage from this, I gave him the fame to hold, and introduced a crotchet, as I thought, into the eye, but it proved to be the mouth; and, at the time when he preffed the head from the os pubis, I extracted. My hold broke once or twice, till at laft, I fuppofe, fixing in the maxilla inferior, we fucceeded in the attempt. Some little flooding had appeared all the while.

"I muft not forget to mention, that when we found the arm obftruct us fo much, I twifted it off from the fhoulder. No figns of life appeared in the child, but it was very large. The woman was afterwards as well or better than could be expected. The uterus, in the attempt to turn, felt as if it had loft its oval or round figure, and feemed as if it enclofed the fœtus like a fheath. I was about an hour and a half with her; the waters had been gone twelve or fourteen hours."

This gentleman afks, "Whether an attempt fhould not have been made immediately when the membranes broke?" The doctor's anfwer was much to the following purpofe:

"No doubt, if you had been called in fooner, there would have been a greater probability that you would have turned the child, efpecially if all the waters did not come off at once; but if all the waters came off before the arm and head were locked clofe in the upper part of the pelvis to keep them up, the difficulty would have been as great at firft as after. What you obferve about the uterus is right; for when the child's head prefents, and the breech and legs are extended up to the fundus, the uterus embraces the child like a long fheath, lying up and down in the abdomen; but when the child prefents with any other part than the head, then it is more of a globular figure, and the child can be eafier turned. I think you acted very right in firft making a trial to turn, and when you could not fucceed, to try if one blade of the forceps would affift, efpecially when the arm was down; though I feldom find that one blade does much fervice, or is fo certain a method as when both are applied. No doubt alfo, as you could not deliver, and the arm was fo big as to hinder your operating, it was neceffary to take it off. You do not mention if you opened the head before you extracted with the crotchet; becaufe this always leffens its bignefs, and allows it to come along with greater eafe: but perhaps that was unneceffary after the arm was out of the way; and it is alfo probable that both blades of the forceps could not be applied before that limb was taken off."

CASE XV.—Another of Dr. Smellie's correfpondents was fent for to a woman who had been feveral hours in labour, and

although ſhe had ſtrong pains, the head ſtill ſtopped at the upper part of the pelvis, and did not advance.

After putting his patient in a proper poſition, he introduced both blades of the forceps; and having ſlipped them up on each ſide of the child's head, and locked the handles together, he began to pull along with a conſiderable force. As the forehead lay to one ſide of the pelvis, he tried to turn it back to the ſacrum; but it could not be moved, being ſo firmly fixed in the upper part of the pelvis.

This method not ſucceeding, he brought out the forceps, and reſolved to turn the fœtus, and deliver by extracting it by the feet. This being the woman's firſt child, he found the os externum ſo rigid that it required many efforts during every pain before it could be dilated: this being effected, he endeavoured to force with his hand the head of the child back into the uterus, ſo as to allow ſufficient room to come at the feet.

After repeated trials, he could not with all his ſtrength raiſe the head ſo as to paſs his hand on one ſide of it; however, during theſe efforts, he found the laſt vertebra of the loins project more forward than common.

In conſequence of this obſervation he deſiſted; fearing that if he ſhould turn the child, it would be impoſſible to ſave it, on account of the great force it would require to bring the head through the narrow pelvis; excluſive of the riſk the mother might run of a laceration of the uterus, before the feet could be brought down.

Having fatigued both the woman and himſelf, he took ſome reſpite; then opening the head, introduced the crotchet at the back part of the pelvis, and fixing it above the chin, as he perceived after the delivery, he tried to bring down the head; but by this purchaſe it was prevented, and forced againſt the upper part of the bones of the pubis.

Having withdrawn the inſtrument, he introduced it again along the ſide of the pelvis, and moving it gently to the pubis, fixed the point on the ſide of the occiput; there finding a firm hold, he inſinuated two fingers of his other hand into the opening; then pulling and exerting great force with both hands, he at laſt delivered the head; and the body followed with little difficulty.

The patient was ſtrong, and behaved with great courage all the time, though ſhe complained of great pain in the parts: ſhe was not lacerated in the leaſt, and recovered much ſooner and better than he expected.

He obſerves that the opening was through one of the bregmata; that his fingers, when introduced, were violently ſqueezed as the head came down, and deſires an opinion of his manage-

ment of this, as well as of the other two cafes juft related which were more fuccefsful.

Dr. Smellie's anfwer to this account was to the following effect: He fays,

"Your fucceeding fo well with the forceps in the two cafes, where the heads of both children were come down to the lower part of the pelvis, I am afraid ran you into an error in trying them too foon in the laft.

"You obferve, that the head was high in the pelvis; that it was the woman's firft child; that fhe had only been feveral hours inftead of days in labour; was ftrong, and had vigorous pains; that although you fuppofed the pelvis was narrow, yet the head was brought along with the affiftance of the crotchet; that the opening was fmall, and the body eafily delivered.

"All thefe circumftances plainly fhew, that you ought to have waited with patience to obferve what thefe good pains would have done; for if the pelvis is narrow, it takes a long time before the head can be moulded to its form, and fqueezed through it; more efpecially in a firft child, where the os uteri, vagina, and external parts, are more rigid, and commonly take more time to dilate."

CASES XVI. and XVII.—In thefe two cafes delivery was effected with the crotchet.

"In thefe," fays the writer, "I found a good deal of difficulty. The one was when the arm prefented without the labia, the fhoulder was pretty far advanced, and the head and feet were firmly locked high in the pelvis. The woman had been fome days in labour: I endeavoured all I could to get at the feet; but it was not in my power. After opening the cheft and abdomen, I was obliged to bring away the child double, which was pretty eafily done, as the child had been fome time dead. The woman recovered very well.

"The other cafe was where the head was pretty far advanced into the hollow of the pelvis, but ftuck at the fhoulders above thefe bones. I did endeavour to deliver her with the forceps, having introduced them twice. They would not hold, which I thought was owing to the loofenefs of the bones of the fkull. The child had been fome time dead, and the woman long in labour, and in a low way. I delivered her with the crotchet. I told her friends I did not think fhe could live till fhe was delivered; but fhe lived for half an hour after."

CASE XVIII.—In this the head was prematurely opened by a practitioner. The writer defcribes the cafe to have happened at Sudbury, and ftates it to have been attended with the following circumftances. The woman was rather of a robuft, ftrong conftitution, large, ftraight, and feemingly quite well proportioned. She was in labour about fix or feven hours; pains pretty fevere,

but not very frequent, nor any ſigns of flooding; at which time ſhe ſent for one who was a mere pretender to midwifery. This man, more from impatience and raſhneſs than any ſort of neceſſity, fancied as ſoon as he came that ſomething muſt be immediately done, and therefore proceeded to ſhew his dexterity, by making a wound with a common pair of ſciſſars, as ſoon as he could poſſibly reach the unhappy babe, which came into the world a bleeding victim. It was apprehended that the child's face was to the mother's right ilium, and not very low down; conſequently there could not be any material uſe in this opening; as no crotchet was employed, the contents were not evacuated, nor the opening made large enough for the ſutures to collapſe much; the child being at laſt brought along with only the help of the fingers.

Dr Smellie's opinion, returned with the fœtus, was as follows: "After examining the child, and conſidering your ſtatement, I cannot help thinking, with you, that the gentleman has been a little too haſty in the operation. The woman had been ſafely delivered before, at this time was ſtrong, had ſtrong pains, only ſix hours in labour, the head when opened, coming along only with the aſſiſtance of the fingers in the opening. Theſe ſtrong pains, without the cerebrum being diſcharged, or the head ſqueezed into a longiſh form, ſhew plainly that they might have been ſufficient for the delivery. The deſign of opening, is to let out the contents, that the head may be diminiſhed in its bulk when too large to paſs; and if this had been the caſe, ſuch an operation ſhould not be attempted, unleſs the woman's pains and ſtrength began to fail. I had a caſe yeſterday, the woman very big with the firſt child; the labour began at four in the morning; ſhe had ſtrong pains, and was ſafely delivered of a large child about eight at night. The head ſtuck in the pelvis, was ſqueezed to a great length, but by the aſſiſtance of the forceps was ſaved. However, no practitioner can judge of theſe matters, unleſs he had been preſent, becauſe he can ſeldom rely on any accounts, and we always ought to judge on the charitable ſide, eſpecially as none of us are perfect; and, if this gentleman has acted imprudently, it ſhould be a leſſon for you and me to act in a contrary manner, which will always in the end turn to our advantage."

The doctor adds, that "the fœtus ſent was as large as any he had ſeen; the opening at or near the vertex, and the head of a round globular figure; from which circumſtances it appears that it had not been ſqueezed down into the pelvis, but lying above the brim; that the gentleman, either from great ignorance of his profeſſion, or hurry of other buſineſs, which laſt is a moſt ſhocking reaſon, did certainly act the part of a bad accoucheur."

Case XIX.—Dr. W. was called to a woman in labour of her

tenth child; the membranes had been broken, and all the waters difcharged many hours. The head of the child was advanced to the lower part of the pelvis, the forehead to the pubis, and the funis umbilicalis without the external parts, in which the circulation had been obftructed by the preffure of the head: a certain proof that the child was dead.

Having failed in his attempt to deliver with the forceps, he could not with all his force extract the head, even after he had opened it, until feveral bones of the cranium were torn out with the crotchet.

Having delivered the head, he was obliged to fix the blunt hook in the arm-pit to bring down the fhoulders, and even after that, it required great force to deliver the abdomen, which was much fwelled.

CASE XX.—A practitioner was called to a woman who had formerly been delivered of four children, none of whom could be faved: fhe at this time had been long in labour.

On examining, he found the pelvis very narrow, the forehead, in place of the vertex, prefented; the arm was alfo protruded through the labia. He waited a confiderable time to try what the labour pains would do with the ufual affiftance of the hand, that the child, if ftill alive, might be faved.

As the woman grew gradually weaker, and the pains had no effect, he made a large opening in the cranium, and by dint of confiderable force, extracted the fame with the forceps.

CASE XXI.—The woman's pelvis being fmall, fhe had been delivered in a former labour with great difficulty; on which account, when the accoucheur attended at this time, he waited many hours in hopes that the pains would force the head lower down into the pelvis.

At laft, the patient, all of a fudden, was taken with frequent faintings; her ftrength failing, and the pains growing weaker, he was afraid of delaying his affiftance too long.

As the head was too high to attempt affifting with the forceps, the pelvis too fmall, and the woman too weak to venture turning, he perforated, and made a large opening in the cranium, from which iffued a large quantity of bloody ferum: after this difcharge, he, with the affiftance of the weak pains, and his fingers in the opening, delivered the woman; and no bad confequence enfued.

CASE XXII.—The fame gentleman was called to a woman in labour of her firft child. The midwife informed him that the membranes had been broken, and the patient in a lingering way for five days; but that fhe was now grown weak, and the pains, that had been ftrong, were entirely gone off.

As the head prefented, he firft tried to turn and deliver in that manner; then he ufed the forceps. Both thefe attempts failing,

he opened the head, introduced a crotchet with great caution, and brought out ſome of the bones of the cranium: at laſt he was obliged to introduce a curved crotchet on each ſide, which had the deſired effect. After the delivery, on examining the child's body, it plainly appeared to have been dead many days; for the belly was of a livid colour, and the ſcarf ſkin ſtripped off in the handling.

CASE XXIII.—In this the face preſented, and the child was delivered with the crotchet. It fell under the care of a gentleman in Eſſex.

The face of the child preſented at the lower part of the pelvis, the forehead to the right iſchium; and the membranes had been broken ſeveral hours before his arrival.

He firſt endeavoured to puſh up the head ſo as to bring the child footling; but it was ſo wedged in the bones that he could not move it. He next tried to deliver with the forceps, which alſo diſappointed his expectations: at laſt he was driven to the dernier reſource, that of diminiſhing the head.

As he could not perforate the bones of the face and forehead, to make an opening through theſe parts, he introduced a crotchet above the temporal bone; and, at length, after ſix hours' fatigue in trying theſe different ways, he delivered the patient.

As Dr. Smellie's correſpondent mentions nothing of the ſtrength of the woman, and the force of the pains, he takes it for granted, that he did not begin to operate till there was no hope of delivery by the efforts of nature, as the methods he uſed to effect delivery ſhould never be attempted but in the laſt extremity.

What ſurpriſed him was, the great length of time the practitioner was at work, and the fatigue he underwent before he could deliver the patient, unleſs he deſiſted a long time between every trial, and only extracted in a ſlow manner, and at intervals.

CASE XXIV.—Mr. B. was called to a woman who had been extremely hearty during her pregnancy, was indulged in eating, even to exceſs, and was uncommonly big. When ſhe was in labour, the midwife had promiſed a ſpeedy delivery, from nine in the morning till ten at night.

"When called," ſays he, "I found the head preſenting, and imagined in a good ſituation to aſſiſt with the forceps; but after introducing them, I could not, with all my ſtrength, move or deliver the head, neither could I puſh up my hand into the uterus to deliver the child by the feet.

"I next tried to extract the head with a crotchet; this proved unſucceſsful alſo: at laſt, after four hours working to no purpoſe, and a flooding coming on, I perforated the ſkull, and delivered the child, and the woman recovered."

This gentleman begs Dr. Smellie's opinion, whether waiting in ſuch a caſe would not have been dangerous for the woman. The child, he ſays, was very large, and weighed ſixteen pounds. The doctor's anſwer was in theſe terms:

"After examining all the three caſes you ſent me, I doubt your ſucceſs in them has been the occaſion of your truſting too much to good fortune in the fourth, where you were obliged to deliver with the crotchet, which I am afraid proceeded from trying both to deliver with the forceps, and to turn the child, before it was abſolutely neceſſary. You do not deſcribe the ſtate of your patient when you were called. If ſhe was much weakened and exhauſted from the length of the labour, the pains lingering, and no hopes of delivery from them, you were in the right to try the two firſt methods to ſave the child, and after theſe, if the woman was in abſolute dang r of her life, you are excuſable for having recourſe to the laſt expedient.

"When you found the head would not come along with the aſſiſtance of the crotchet, you ſhould have opened it immediately, that the contents might be diſcharged, and the head diminiſhed. This would have ſaved the time and fatigue you mention.

"I hope this unſucceſsful caſe will be a caution againſt uſing the forceps too ſoon. Attempts to turn the child with great force, when the head is engaged in the pelvis, and all the waters are diſcharged from the uterus, frequently looſen the placenta, and bring on a flooding, ſuch as you deſcribe."

Case XXV.—Mr. G. L. was called to a woman of fifty years of age, in labour of her firſt child, with a pelvis exceſſively narrow.

The patient had been long in labour, was very weak, and the pains had abated. "After ſtretching the external parts," ſays he, "I could not introduce my hand through the bones of the pelvis, however, in this trial, I felt, with my fingers, that the head preſented.

"On opening the head, more than a quart of fœtid ſerum was diſcharged. I then introduced two fingers, and along them a crotchet, and got a firm hold, with that inſtrument, on the os petroſum.

"After having endeavoured with all my force to extract the head with both hands, one at the inſtrument, and the fingers of my other in the opening, I could not move it, until I introduced another crotchet on the oppoſite part of the cranium. By pulling at both theſe inſtruments, ſome of the bones were looſened, and came away with the crotchets.

"I then, with the ſciſſars, cut in pieces the whole of the cranium, which, with two or three fingers, I extracted, piece by piece; afterwards, by the aſſiſtance of the blunt-hook, I brought down the ſhoulder and ſeparated it from the body. I was obliged, in the ſame manner, to extract every part of the child."

Case XXVI.—The gentleman who relates this cafe was called to a poor woman in St. Giles's, at eight o'clock at night, and was informed that fhe had been feveral days in labour, and was feemingly much exhaufted.

A young and inexperienced accoucheur who attended, as the hairy fcalp was tumefied, imagined that the breech prefented; but, upon examination, it was found to be the head with one of the hands; and the pelvis of the woman was very narrow.

" She told me," fays the relater of this cafe, " that fhe had been delivered twice before of dead children. Upon this information, and as fhe ftill had ftrength, and frequent fmall pains, and complained that fhe had enjoyed no fleep for two nights before, I ordered her an opiate.

" This precaution being taken, we left her to the care of the midwife, defiring the patient might be kept as ftill as poffible, in hope fhe might get fome reft.

" We were again called early next morning, and found her quite worn out with the pains and want of fleep, and the head of the fœtus not in the leaft advanced.

" Being afraid, if I delayed the delivery longer, that a mortification might foon invade the parts of the woman, from the continued preffure of the child's head, I opened this laft with the fciffars, and enlarged the perforation. This being done, I introduced the curved crotchet within the fkull, mounted with the fheath, to prevent the fharp point's hurting the patient, if it fhould flip in pulling.

" Having deftroyed the ftructure of the cerebrum and cerebellum, that they might pafs off, fo as to diminifh the head, and finding I had a good hold in the infide with that inftrument, I pulled with one hand at that, and with the fingers of the other in the opening, by which means I extracted both the parietal bones; but, although I exerted all my ftrength, and a great part of the contents were difcharged, yet the head was not moved an inch lower.

" Failing in the above attempt, and finding I could not introduce my fingers, to direct the fharp crotchet on the outfide of the head, on account of the narrow pelvis, and the arm filling up the vagina, I was obliged to twift off the limb from the fhoulder. This was pretty eafily effected, as the child had been for fome time dead, which plainly appeared from the fkin ftripping off from that member. After removing the arm, I even then with much difficulty introduced my fingers, and along with them the crotchet, and got the point fixed above the chin; then pulling with great force, and with both hands, in the fame manner as before, the head began to move down within the projection of the diftorted bones, and I continued pulling it, till it was entirely delivered.

" The body followed without the ufe of the crotchet, but not without ufing great force. The diftance, fo far as I could judge, did not exceed two inches and a half from the jetting forwards of the upper part of the facrum to the pubis. Although the woman had fuffered fo much from the length of the labour, as well as from the great force ufed at the delivery, yet fhe recovered better than could have been expected "

CASE XXVII.—A letter from a gentleman near London to Dr. Smellie, contains the following hiftory of a laborious cafe, in which he honeftly owns he prematurely tried to deliver with the forceps; but the head of the fœtus being too high in a narrow pelvis, that method did not fucceed. He then adminiftered an opiate, to procure fome reft, and allay the violence of her pains, as fhe had been much fatigued. Being called on other bufinefs at fome diftance, he did not fee her before the following day, when he found her much exhaufted by the labour; and, being again called to another patient, he was afraid of her dying, if he did not deliver the child before he went away. As the head was not advanced fo as to promife any fuccefs from the forceps, he was obliged to ufe the difagreeable method of opening the cranium, through a large tumor of the hairy fcalp; after which, with the affiftance of the blunt crotchet, he extracted the child, but with greater difficulty than he expected, as it was very large.

He takes occafion to lament the condition of poor women who live at a diftance from affiftance, in the country, and the difmal fituation of practitioners, who are feldom called in time, or, even when properly called, are prevented, by a hurry of other bufinefs, from giving due attendance. This is too frequently the occafion of tempting them to operate, before it is abfolutely neceffary; on which account, he fays, he is refolved to attend none but patients whom he can deliberately affift, and leave fuch cruel methods to more obdurate practitioners.

CASE XXVIII.—In the Medical Effays of Edinburgh, vol. III. art. 19, is the following account of the fides of the os uteri grown together in a woman with child, by Dr. Simfon.

" A woman, forty years of age," fays the doctor, " obfervably narrow between the offa pubis and os facrum, had been four days in fevere labour of her firft child, when I was called to affift her: the child appearing to have been dead for fome time, I opened its head, and extracted it, but with great difficulty; its fhoulders and haunches being too large to pafs in the ftraitened paffage between the bones. During fome days after her delivery, fhe paffed a great many fmall rugged ftones by the urethra, and, at length, after her urine had been ftopped fome time, her hufband drew out of the urethra a large piece of thick membranous fubftance, three inches in length, and, in fome parts, two inches broad; one fide of it was covered with a cruft of fmall fharp ftones, the other

ſide was inflamed and bloody, which made me judge it to be part of the coats of the bladder ſeparated; and I was confirmed in thiso pinion, by introducing a catheter into the bladder: for, whenever it touched certain parts of the ſides of the bladder, blood came with the urine. The patient continued a long time with a plentiful ſuppuration about the pudenda; but we did not ſuſpect that the pus came from the internal parts, but only from the exterior, which had been ſomewhat lacerated. About three months after delivery ſhe was again with child, and took her pains after the ordinary period. She continued two days in hard labour before I ſaw her. The midwife then informed me, that the inner orifice had yielded nothing; I left her half a day, and things remaining in the ſame way at my return, I examined her condition, and found, that the os tincæ had not only not yielded, but that the ſides of it were grown together, without any veſtige of a paſſage, whereupon I aſked the aſſiſtance of another phyſician, and Dr. Haddow being called, was, as well as the midwife, ſenſible of the caſe being ſuch as I judged it to be, wherefore we agreed to make an inciſion into the os uteri; but we were firſt obliged to dilate the vagina ſufficiently, that we might operate more ſecurely. We had no ſpeculum matricis, and therefore endeavoured to ſupply it by ſome other inſtruments. We tried to make the dilatation with a pair of long broad-bladed forceps, but they neither had ſtrength to dilate ſufficiently, nor did they keep the vagina equally open. After this we cauſed two pieces of wood, each three inches long and two and a half broad, to be made concave on one ſide, and convex on the other, and of no more thickneſs than we thought would be ſufficient to be a ſtrong enough preſſure by the neceſſary dilatation. When theſe were finely poliſhed and beſmeared with greaſe, I introduced them into the vagina, with the concave faces to each other, then ſliding in the legs of a ſpeculum oris between them, and turning its ſcrew, I ſeparated the pieces of wood ſo far as we could ſee diſtinctly the cicatrix of the grown-together parts, and could have eaſy acceſs to divide them, which I did, by an inciſion at leaſt half an inch deep, before I pierced through the ſubſtance of this part of the womb; then immediately introducing my finger at this wound, I touched the head of the child, and felt the whole circumference of the paſſage hard, like a cartilage, which yielded nothing to ſeveral throws ſhe had after the inciſion, ſo that I was obliged to guide a narrow-bladed ſcalpel with my finger, to make ſeveral inciſions into this cartilaginous ring; in doing this, there was not the leaſt appearance of blood, and the patient had no trouble, except what the dilatation of the vagina gave her. The labour continuing, the paſſage dilated a little, but not ſo much as to give any hopes of its allowing the child's head to paſs, notwithſtanding the bones of the cranium were overlapped; and there-

fore I was obliged to bring away the child, as I had done the former. In this birth, there was no liquid with the child, nor did any blood follow it; it was quite fupple, and had a white chalky cruft over its whole body; fo that we were convinced it had been dead fome time. The want of waters was fome furprife, till I recollected, that, in the time of labour, fhe told us they were paffing, at which time I had the curiofity to make ftrict obfervation, and found what fhe called the waters paffed by the urethra, which opened externally by three different orifices; this, with her having loft fuch a portion of the bladder formerly, and her being fubject to the gravel, gave me ground to think there was fome communication between thefe paffages and the cavity of the womb above the os tincæ, which had allowed the waters to be evacuated. I was the more inclined to entertain this fuppofition, becaufe frequent inftances have been obferved of ftones making their way through the neighbouring parts, as happened to a boy in this neighbourhood, who paffed a very large ftone, which had lodged long in the bladder, by the anus, by which the urine had its courfe for fome time after.

"My patient, immediately after being put to bed, was feized with a pleuritic pain, very high fever, and difficult breathing; which coming on fo foon after her being fatigued feveral days with hard labour, during which fhe flept none, but drank much of every thing in her way, appeared to me rather the caufe of her death in twenty-four hours after, than any confequence of the incifion I had made, for fhe never complained of any uneafinefs in thofe parts, nor had any hæmorrhage. Notwithftanding all the folicitations I could ufe with her relations, I could not prevail with them to allow me to open her body."

SECT. VII. *Of the* VECTIS, *and its* APPLICATION *in* MIDWIFERY.

The vectis, ufed in the practice of midwifery by fome eminent accoucheurs, has not yet been noticed. It is an inftrument confifting of one blade, flightly curved, and a handle; fomewhat larger, but fimilar in form to one of the blades of the forceps. We fhall lay before the reader Dr. Denman's excellent obfervations on this inftrument, from the fecond volume of his Introduction to the Practice of Midwifery.

1. "The true origin of this inftrument," fays the doctor, "or time when it was firft difcovered, is not known; but before any accounts of the vectis were publifhed, fome difficult cafes were recorded, in which women had been delivered with one blade of the forceps, which might then be well confidered as a vectis, though not called by that name. But when only one blade of

the forceps had been used, the operation was mentioned as something extraordinary, to shew perhaps the judgment, skill, or good fortune of the person who performed it, and not as leading to the use of a particular instrument, or to a rule of practice. It is probable, that the instrument used by the Chamberlens in the last century was the vectis; but this is conjecture, for, after much enquiry, though scarcely credible, no person has yet been able to discover, that any of them left either a pattern or description of the instrument which they used. In the second volume of Heister's Surgery there is a delineation of a true vectis, recommended to him in very strong terms by Palfyn, a surgeon of eminence at Ghent; but neither this instrument nor its description engaged much attention, nor was the vectis generally known in this country before the year 1750. For though it had been used before that time by Rhonhuysen, a surgeon at Amsterdam, after whose name it has been since called, it was reserved by him with great secresy, to his own credit and advantage; and, after his death, it became the property of his only daughter, from whom it was purchased by De Bruyn, an eminent surgeon of the same place. It appears that De Bruyn concealed the secret with as much caution as Rhonhuysen; or that he instructed students in the use of the vectis at a considerable price, and with an obligation not to divulge to others what he taught them; which must have raised great suspicion of imposture on his part, and of credulity in those whom he taught. The names of other gentlemen who changed or improved the instrument soon became known; and, annexed to a paper written on this subject by the celebrated professor Camper, in the fifteenth volume of the Memoirs of the Royal Academy of Surgery, is a plate representing the vectes used by Rhonhuysen, Boom, and Titsing.

" The advantages arising from the use of the vectis in the hands of De Bruyn, ostentatiously urged, appearing to be very great, Vischer and Vander Pol, two physicians at Amsterdam, from motives of pure benevolence, purchased the secret from De Bruyn, in the year 1753, and immediately published a description of the instrument, with directions for using it; but none of the papers printed on this subject in the Dutch language have ever been translated into our own. While the vectis remained a secret, the reports of the benefits obtained by it were probably much exaggerated, especially those of De Bruyn, though Van Swieten says he was an honest man; but, when it was divulged, and the positive and comparative merits of the vectis strictly examined, it retained its credit and estimation in the opinion of many competent judges in different parts of Europe.

" When the vectis was very much used, and highly esteemed, at Amsterdam, as an invaluable improvement in the practice of midwifery, the forceps was the favourite instrument in this coun-

try; especially as altered by Smellie, who was then the principal teacher of the art in London. But the chief practice in this city was successively in the hands of Drs. Bamber, Griffith, Middleton, Nesbit, and Cole, some, if not all of whom, except Dr. Bamber, whose forceps I have seen, preferred the vectis to the forceps. To those gentlemen succeeded Dr. John Wathen, a man of great ingenuity, and most pleasing manners, who altered the form and reduced the size of the vectis, and frequently used it with a dexterity that has astonished me. In the year 1757, that most excellent charity for delivering poor women at their own habitations was established; and Dr. John Ford was the first physician appointed to conduct it. On every occasion which required instruments of this kind, Dr. Ford used the vectis; and his coadjutors and successors, Drs. Cooper, Cogan, Douglas, Sims, Dennison, Squire, and Croft, with many others, have followed his example. From the deserved reputation of these gentlemen, who have at all times expressed their approbation of the vectis in preference to the forceps, many have been induced to try it, and the general opinion of its utility has increased. At the present time, all who are engaged in the practice of midwifery would consider themselves as deficient, if they were not acquainted with the structure and manner of using the vectis; some who formerly preferred and used the forceps, have relinquished the use of this instrument for the vectis; and others who, from education or habit, continue to use the forceps, are very willing to allow the equal, if not superior, utility of the vectis."

2. In a subsequent section Dr. Denman describes *the different kinds of vectes* in the following terms:

"The first vectis," says he, "of which we had any knowledge in this country, was similar to that of Palfyn, before mentioned. The instrument purchased by Vischer and Vander Pol, which was made public in a pamphlet written in the Dutch language, is different from that of Palfyn. In the account given by Camper, there appears to be some difference in the form, length, ma[illegible]r, and degree of curvature of the vectes used by De Bruyn, Boom, and Titsing. But if the powers of the instrument were preserved, and the general principle of using it followed, it is probable that all those who preferred the vectis thought themselves at liberty to alter its form, or to vary its dimensions, making the instrument, by such alterations, suitable to their own ideas of the properties required.

"When the vectis was first known in this country, that described by Heister was preferred to those recommended by the surgeons at Amsterdam. The vectis used by Dr. Cole was like one blade of the forceps, somewhat lengthened and enlarged. That of Dr. Griffith was of the same kind, with a hinge between the handle and blade; and that of Dr. Wathen was not unlike

Palfyn's, but with a flat handle, and a hook at the extremity of the handle, which prevented its ſlipping through the hand, and might be occaſionally uſed as a crotchet. Many other changes have been made in the conſtruction of the inſtrument, but the vectis now generally uſed is of the following dimenſions:

" The whole length of the inſtrument, before it is curved, is twelve inches and a half.

" The length of the blade, before it is curved, is ſeven inches and a half.

" The length of the blade, when curved, is ſix inches and a half.

" The wideſt part of the blade is one inch and three quarters.

" The weight of the vectis is ſix ounces and a half.

" The handle is fixed in wood.

" From this deſcription, any perſon acquainted with the forceps could find no difficulty in forming a juſt idea of the vectis, or an artiſt in making it. It appears alſo, that a ſingle blade of the forceps might, in many caſes, be uſed not inconveniently, inſtead of any other vectis, and would generally anſwer the purpoſe without the trouble of introducing the ſecond blade, as I have often experienced before I was acquainted with the vectis.

" With reſpect to the part of the blade of the vectis which ought to be curved, and the degree of curvature, there has been ſome difference of opinion; but this muſt relate either to the eaſe of introducing, or the advantage of acting. With a ſmall degree of curvature diffuſed through the blade, the inſtrument may be moſt eaſily introduced, and it is moſt ſuitable to the form of the head, nor can the degree of curvature required, on any principle, be very great. But if, together with the power of the lever, we aim at acquiring much extracting force, the curvature ſhould be ſomewhat increaſed towards the extremity; becauſe the two centres, on which the force uſed would reſt, would be at thoſe parts of the head on which the inſtrument might bear, and the part on which it would reſt, whether the ſides of the pelvis or the hand of the operator.

" For rendering the introduction of the inſtrument more eaſy, and for preventing all the inconveniencies which might ariſe from the difference of curvature, Dr. Aitkin of Edinburgh contrived a vectis, which he has fancifully called the *living lever*. When this is at reſt it is quite ſtraight; but while it is introducing, by turning a ſcrew in the handle, the blade is jointed in ſuch a manner as to bend gradually forwards as the inſtrument is advanced, ſo that the extremity of the blade is always kept cloſe to the head of the child, of whatever dimenſions that may be. There is much ingenuity in the contrivance; but of the effect in practice I cannot ſpeak, having never tried this inſtrument, not wiſhing for one more perfect than that in ordinary uſe. But a gentleman

informed me, that in a trial he made, the chain, on which the mechanifm chiefly depends, broke, and he was obliged to finifh the operation with a common vectis; fo that in all probability the common vectes are actually preferable to any of the complex kinds.

" To leffen the preffure made by the inftrument, when in action, upon the parts of the mother, on which it might bear, fome perfon contrived two holes on a part of the blade, near the handle, through which a ftrong riband or tape was to be paffed, which being afterwards tied and pulled firmly, when the inftrument was acted with, was fuppofed to confine it firmly to the head of the child, and prevent or leffen the preffure which might otherwife be made upon the parts of the mother: but it appears that the fame end may be anfwered better by an intelligent and dextrous management of the inftrument, than by this contrivance."

3. Dr. Denman next obferves on the comparifon of the vectis with the forceps. He fays, " The general principle of practice, that the ufe of no inftrument is to be allowed except in cafes of abfolute neceffity, ought not to be infringed becaufe we entertain a high opinion of any inftrument, or becaufe we may have acquired dexterity in ufing it; for fuch reafons would be indefenfible, and any conduct founded upon them would be highly culpable. That principle, founded in common fenfe as well as medical knowledge, and confirmed by daily experience, muft be held inviolable. The real value of any inftrument will be fhewn by its efficacy to anfwer the purpofe for which it may be ufed, and by the fafety and convenience with which it can be managed, when its ufe becomes abfolutely neceffary.

" There has been much verbal difpute among thofe who vindicated the fuperiority of the vectis to the forceps, and thofe who maintained the long eftablifhed credit of the forceps againft the encroachments of the vectis: but the comparifon between the two inftruments has never been brought fairly to an iffue, which might have been done by a difcuffion of the two following queftions:

" Is it poffible to deliver a woman fafely with the forceps, in any cafe not manageable with the vectis?

" Is it poffible to deliver a woman fafely with the vectis, in any cafe not manageable with the forceps?

" We may take it for granted, and I believe it is true, that in far the greater number of cafes which occur in practice, either of thefe inftruments may be ufed indifcriminately, with equal fafety, advantage, and eafe, allowing for the dexterity which may have been acquired by the habit of ufing either inftrument. It is but lately that thofe who prefer the forceps have afferted, that they could deliver a woman in any cafe of difficulty not manageable with the vectis; but, as far as my experience enables me to judge, fuch a claim in favour of the forceps cannot be fupported. The

experience with the inſtrument, I dare not attempt to form a precife rule for the extent of our conduct with the vectis, that is, how high we may venture to introduce it, or with what degree of force we may uſe it. But when, without regard to the facility with which the vectis may be introduced, or any other conſideration except the neceſſity of the caſe, under the circumſtances before ſtated, we have determined upon uſing this inſtrument, the patient being placed in the ſame ſituation, and every thing prepared as when the forceps are to be uſed, the operation is to be performed in the following manner:

" Paſs two fingers, or the forefinger of the right hand, to the ear of the child, and introducing the vectis between the fingers and the head of the child, conduct it ſlowly forwards till the point of the vectis reaches the ear, wherever that may be. Then advancing the inſtrument as if it were a blade of the forceps, carry it on till, according to your judgment, the extremity of the blade may reach as far, or a very little beyond, the chin of the child, when the line of the head, on which the inſtrument reſts, will be in a ſtraight direction from the vertex, over the ear, to the chin of the child; and this is the moſt favourable poſition in which it can be placed. Then graſping the handle of the inſtrument firmly in the right hand, wait for the acceſſion of a pain, during the continuance of which, raiſe the handle of the inſtrument gently but firmly towards the pubes, at the ſame time exerting a ſmall degree of extracting force. When the pain ceaſes, let the inſtrument reſt; and when it returns, repeat the ſame kind of action; and every time of acting endeavour to leſſen the preſſure on the ſoft parts of the mother, with the two fingers, or the inferior ſide of the palm of the left hand placed in ſuch a manner as to form, in ſome ſort, a cuſhion on which the inſtrument may play, or be ſupported. By a repetition of this action during the continuance of the pains, the head of the child will ſoon be perceived to deſcend, and the face to turn gradually towards the hollow of the ſacrum. But ſhould the very moderate force we have recommended be found inſufficient to bring down the head of the child, it muſt be gradually and cautiouſly increaſed, till it is ſufficient to anſwer the purpoſe; and this may be done conſiſtently with the ſafety both of the mother and child. When the vertex begins to fill and protrude the external parts, it is probable there may be no farther occaſion to act with the inſtrument; or, if further action be required, it muſt be extremely gentle, taking all poſſible care, by turning the handle towards the iſchia or ſide of the pelvis, by ſupporting the perinæum, and by ſlow proceeding, to guard againſt a laceration of the parts, as was before adviſed.

" During the operation, the vectis being confined to that part of the head where it was originally placed, muſt, as the head deſcends, neceſſarily change its relative ſituation to the mother,

and be gradually turned from the pubes to the ſide of the pelvis, as was remarked of the handles of the forceps.

"It is alſo to be obſerved, though from the name of the vectis it might be ſuppoſed we had the power of acting with it as a lever only, that it will be found to poſſeſs a conſiderable degree of extracting force, even when the curvature is but ſmall; and that we are able, at the time of uſing it, to direct with convenience, and in various ways, the head of the child as it deſcends.

"In uſing the vectis ſome have recommended the application of it towards the hollow of the ſacrum, and ſpoken of the advantages of this mode of application. But I have perſuaded myſelf, that the opinion which could lead to this practice was erroneous, that the inſtrument would then be worked with leſs efficacy, and there would be a greater hazard of doing miſchief to the mother and child.

"It may laſtly be obſerved, that ſome gentlemen have, by frequent practice, acquired ſuch wonderful dexterity in the uſe of the vectis, as to finiſh the operation of extracting the head of a child with one ſingle action of the inſtrument. But being ever afraid of ſacrificing ſafety to dexterity, I only pretend to deſcribe a method of uſing this inſtrument ſecurely and efficaciouſly; and muſt therefore be excuſed from commenting further on all that has been unadviſedly objected againſt, or advanced for, the uſe of the vectis, under various circumſtances."

Dr. Denman cloſes theſe admirable remarks on an inſtrument certainly not heretofore appreciated as it ought, by referring the reader to a full and accurate hiſtory of the vectis, given in "Obſervations on Human and Comparative Parturition," by Dr. Bland.

CHAP. III. Of PRETERNATURAL LABOUR.

In whatever manner the child preſents when the body is delivered before the head, the birth is accounted preternatural.

Preternatural labours may be referred to one of the four following claſſes.

I. When one or both feet, knees, or the breech, preſent.

II. When the child lies acroſs in a rounded or oval form, with the arm, ſhoulder, ſide, back, or belly, preſenting.

III. When one or both of the upper extremities preſent, the child lying in the form of a ſheath, the feet towards the fundus uteri, the waters evacuated, and the uterus ſtrongly contracted round the body of the child.

IV. Laſtly, premature or flooding caſes, or others in which it may be neceſſary to force the delivery, either previous to the rupture of the membranes, or quickly after it.

The caufes of crofs labours moft commonly affigned by authors are, The obliquity of the uterus; circumvolutions of the funis umbilicalis round the child's body; the fhortnefs of the funis, or attachment of the placenta towards the fundus uteri; fhocks affecting the mother when pregnant, &c. The pofition of the fœtus may alfo be influenced by its own motion and ftirrings, by the particular form and bulk of its body, by the manner of ftretching of the uterus, by the quantity of liquor amnii, and by many other circumftances.

The fymptoms that indicate an unfavourable pofition of the child, before it can be difcovered by the touch, are very uncertain and fallacious: a crofs birth may, however, be fufpected:

1ft. If the pains be more flack and trifling than ordinary.

2dly. If the membranes be protruded in a long form like a gut, or the finger of a glove.

3dly. If no part of the child can be difcovered when the uterine orifice is confiderably opened.

4thly. If the prefenting part through the membranes be fmaller, feels lighter, and gives lefs refiftance than the bulky ponderous head.

5thly. Laftly, after the rupture of the membranes, if the meconium of the child be paffed along with the waters, it is a fign that the breech prefents, or that the child is dead.

Preternatural labours are difficult or hazardous, according to,

1. The form of the pelvis, and general health and conftitution of the woman.

2. The bulk of the child, and its manner of prefenting.

3. The time the waters have been evacuated, and the uterus contracted round the body of the child.

4. When complicated with plurality of children; the prolapfus of the funis umbilicalis; the limbs of the child entangled in the chord; profufe and violent floodings, from the attachment of the placenta towards the cervix uteri, &c.

Turning is often laborious, and always dangerous in proportion to the force ufed in fearching for and bringing down the feet; though, in general, the difficulty and hazard are not fo great, as in many cafes ftrictly called laborious, when the head prefents; the treatment of preternatural labours being better known, and for the moft part eafier put in practice.

Each clafs of the general divifion of crofs labours includes a variety of different cafes. By confidering a few of every clafs, a general idea of the whole will be formed.

CLASS I.

CASE I.—The fimpleft and eafieft cafe is the Agrippan pofture, when the child prefents with the feet.

The foot is to be diftinguifhed from the hand, firft, by the

weight and reſiſtance it gives to the touch; ſecondly, by the ſhortneſs of the toes; thirdly, by the projecting heel.

When the feet preſent in the paſſage, the labour ſhould be allowed to go on as if natural. If the child be of an ordinary ſize, the woman in health, the parts well proportioned, in the way of aſſiſtance nothing further ſeems neceſſary but the application of a warm cloth round the body of the child, which muſt be properly ſupported till it advances as far as the pains are able to force it. If the ſize be ordinary, or rather ſmall, it will ſometimes make the mechanical turns, and be entirely puſhed along by the force of the natural pains, but it generally ſtops at the ſhoulders after the breech protrudes without the os externum, where the reſiſtance is ſo great that the accoucheur's aſſiſtance becomes requiſite.

In this caſe, the patient muſt be placed on her back, properly ſupported; the hand of the accoucheur muſt be cautiouſly introduced: the parts of the woman muſt be gently ſtretched; the feet of the child muſt be laid hold of, and brought as low in the vagina as poſſible; a ſoft warm cloth muſt be wrapped round them, and the extraction muſt be performed in a ſlow cautious manner, making large motions in a circular or lateral direction, reſting from time to time, if the pains are gone; and if not, always waiting for the natural efforts. When advanced as far as the breech, the body, if not already in a proper direction, muſt be puſhed up, and gently turned with the face towards the mother's back: and to make ſure that the face turns with the body, or to prevent the chin, vertex, or ſhoulders, from catching on the pubes, or angle of the ſacrum, an extraordinary quarter-turn more muſt be made: this muſt be reverſed previous to the extraction; and the difficulty ariſing from the obſtruction of the ſhoulders, muſt be removed in the following manner: While the breaſt and legs of the child are ſupported over the palm and fore-arm of the one hand of the accoucheur, which he draws towards one ſide, he muſt introduce two fingers of the other hand at the oppoſite ſide into the vagina, over the back-part of the ſhoulder, as far as the elbow, and endeavour in the moſt gentle manner to bring down the arm, always remembering in his movements to humour the natural motions of the joint: he muſt then ſhift hands, when the other arm is to be relieved in the ſame manner: both arms being brought down, the woman muſt now reſt a little, when a pain or two generally follows, and the head is alſo forced along. But ſhould the woman be much exhauſted, and if the head does not quickly advance, the child may be loſt from delay. The extraction of the head in preternatural labours is often the moſt difficult and the moſt dangerous part of the delivery; the cauſe of reſiſtance, when it does not advance, is chiefly owing to its confinement between the angle of the ſacrum and pubes, when the bulky part of the head is detained at the brim; whether the reſiſtance be here or towards the inferior aperture of the pelvis, if the head does

not advance in a pain or two, the extraction muſt be made in this manner: While the right hand of the accoucheur ſupports the body of the child below, with two fingers preſſing on either ſhoulder, the left hand and fingers muſt in the ſame manner be placed over the back of the neck, and pulling gently in the direction from pubes to ſacrum, he muſt thus endeavour to bring it along: but, ſhould the pelvis be narrow, or the child's head of a large ſize, or the face be laterally or anteriorly placed in the pelvis, or, what rarely happens, the os uteri contracted round the neck of the child; in either of theſe caſes the accoucheur will ſometimes meet with the utmoſt difficulty. When the above method therefore fails, he muſt introduce two fingers of the right-hand into the child's mouth, while thoſe of the left-hand are expanded over the ſhoulders, as already directed; and in this way he muſt endeavour to relieve it, pulling from pubes to ſacrum, alternately raiſing and depreſſing the head till it advances low down, ſo that the face deſcends from the hollow of the ſacrum, when the accoucheur muſt riſe from his ſeat, and bring the hind-head from the pubes with a half-round turn, imitating that of a natural labour.

If the poſition be unfavourable, the face, if poſſible, ſhould be turned to the ſacrum, by puſhing up the head, or by puſhing back the chin: If the contraction of the uterus is the cauſe of reſiſtance, which rarely occurs, it muſt be gently ſtretched with the fingers. Or if the difficulty ariſes from circumvolution of the chord round the legs, thighs, body, or neck of the child, theſe muſt be diſengaged in the eaſieſt manner poſſible; it is rarely neceſſary to divide the funis on this account.

Should every method fail in bringing down the head, the delivery muſt be effected by means of the forceps cautiouſly paſſed over the ears, with the handles under the child's body, in a direction downwards towards the perinæum. If the pelvis be very narrow, or the head of a large ſize, it muſt be opened by puſhing the ſciſſars through the occipital bone, ſo that the contents of the cranium may be evacuated, and the extraction made by means of the forceps, blunt-hook, or crotchet. But if the head, by the efforts to extract it, be actually ſevered from the body, and left behind in the uterus, an accident which ſometimes occurs, it muſt be delivered by incloſing it in the forceps, while ſecured from rolling by preſſing externally on the abdomen. If the forceps cannot be applied, the cranium muſt be opened, the texture of the brain deſtroyed, and the extraction performed by the fingers of the accoucheur, by the blunt-hook, or by the crotchet. If the under-jaw remains, the head may be effectually ſecured till locked in the forceps, or till its bulk be diminiſhed, by introducing a finger into the mouth, thruſting it through the jaw under the chin, drawing it down, and paſſing a ligature through the perforation.

In caſes where the child has been long dead, ſhould the belly or

thorax be diftended with air or water, and prove the caufe of obftruction, the contents muft be evacuated by opening with the fciffars, or tearing with the crotchet; and, in general, where difficulties occur, the delivery muft be accomplifhed in that manner the circumftances of the cafe will beft admit of.

CASE II.—When inftead of two, one foot only falls into the vagina, the other is fometimes detained by catching on the pubes, and, if eafily come at, fhould be brought down, always remembering to humour the natural motion of the joint; but, fhould the leg be folded up along the child's body, the attempt is fometimes both difficult and dangerous, and ought not to be perfifted in, as the breech will either be forced down by the affiftance of natural pains, or by gently pulling by one leg only.

CASE III.—When one or both knees prefent, the delivery muft be conducted in the fame manner with that of the feet.

CASE IV.—When the feet offer along with the breech, this laft muft be pufhed up, while the former are fecured and brought down, till it be reduced to a footling cafe, and otherwife managed as above.

CASE V.—The breech may prefent with the fore-parts to the mother.

1ft, Anteriorly,

2dly, Laterally; or,

3dly, Pofteriorly.

Sometimes the breech may be difcovered, previous to the rupture of the membranes; but afterwards with more certainty, by the meconium of the child paffed with the waters, and by the touch.

In whatever manner the breech prefents, the delivery fhould be fubmitted to nature, till the child be advanced as far as the thorax, when the feet are to be brought down and laid hold of, the child, if neceffary, pufhed up, the mechanical turns effected, and the delivery otherwife conducted as in a footling cafe. There is much lefs hazard in general, agreeable to an old obfervation of Mauriceau, in allowing the child to advance double, than in precipitating the extraction by pufhing up to bring down the feet before the parts have been fufficiently dilated; a practice difficult and troublefome to the operator; painful, and fometimes dangerous, to the mother; and by which the child is expofed to the rifk of ftrangulation, from the retention of the head after the delivery of the body. If the child be fmall, though doubled, it will eafily pafs in that direction; if large, though the labour be painful, the natural throes are lefs violent and lefs dangerous than the prepofterous help of the accoucheur: If the child thus advances naturally, it will be lefs expofed to fuffer; if it does not advance, the parts of the mother will be prepared for the accoucheur to pafs his hand into the pelvis, to raife up the breech, to bring down one or both feet, and deliver as above.

Weakneſs in the mother; floodings, and convulſions; a very large, child, or narrow pelvis; the prolapſus of the funis, or its compreſſion between the thighs of the child, or between the child and pelvis, by which its life is endangered, if the chord cannot be reduced above the preſenting part; are the only exceptions to the general rule of treating the breech as a natural labour.

The practice of helping forward the breech, by paſſing the blunt-hook under the ham, is now entirely laid aſide: this can never be done with ſafety, till the breech be ſo low advanced that the hand of the accoucheur can be uſed, which may be employed with more advantage as well as ſafety.

CLASS II.

In the former claſs of preternatural labours, it is adviſable to truſt to nature in many caſes, as the birth will often be accompliſhed without manual aſſiſtance: but when the child lies acroſs, no force of pain can make it advance in that poſition; and, without proper aſſiſtance, both the mother and child would periſh.

If the accoucheur has the management of the labour from the beginning, the child may be turned, in the worſt poſition, without difficulty; but when the waters have been for ſome time evacuated, and the uterus ſtrongly contracted, turning is laborious to the operator, painful and dangerous to the mother. In ſuch caſes, the ancients endeavoured to make the head preſent; but, from its bulk, they often failed, and the attempt was often attended with fatal conſequences. The method of delivering by the feet is the moſt important modern improvement in the practice of midwifery; an improvement to which many thouſands owe their lives.

When the child lies in a tranſverſe poſition, the accoucheur muſt inſinuate his hand through the vagina into the uterus in the gentleſt manner, ſearch for the feet, bring them down with the utmoſt caution, and finiſh the delivery as in footling-caſes. To effect this, the following rules ſhould be obſerved:

1. The patient muſt be placed in a convenient poſture, that the operator may be able to employ either hand, as the various circumſtances of the caſe may require.

2. Though the beſt poſture, in general, is laying the woman on her back, it will be ſometimes neceſſary to turn her to her ſide; and, in theſe caſes, where the abdomen is pendulous, where it is difficult to reach the feet, or where they lie towards the fundus uteri, the woman ſhould be placed on her knees and elbows.

3. An exact knowledge of the true poſition of the child, and of the ſtructure and ſtate of the parts, ſhould be acquired, before attempting to make the delivery.

4. The orifice of the uterus ſhould be enlarged, ſo as freely to admit the hand; and the ſtronger pains ſhould be abated, before any attempt be made to deliver.

5. Should the waters be drained off, the parts dry and rigid, and the uterus contracted round the child, warm oil must be injected into the uterus, otherwise its rupture may be endangered.

6. In passing the hand into the uterus, this must be done in the gentlest manner; the parts must be well lubricated with butter or pomatum; the line of the pelvis must be attended to; the efforts of the operator must be slow and gradual; and thus the utmost rigidity in the soft parts will, in time, be overcome.

7. The hand must be introduced only during the remission of pain; when pain comes, the accoucheur must always rest; otherwise he may push his hand, or the fœtus, through the body of the uterus.

8. In pushing up, to come at the feet, this must never be done with the points of the fingers, nor with the hand clenched, but with the palm of the hand, or the broad expanded fingers, and always during the remission of pain, and the latter should also be observed in bringing down the legs; but, in making the extraction of the body, the efforts of the operator should always co-operate with those of nature.

9. The hand should, if possible, be introduced along the anterior parts of the child; and both feet, if easily come at, should be laid hold of.

10. In turning, the accoucheur should never consider the child as dead, nor allow himself to be deceived by symptoms doubtful and fallacious; the child is sometimes born alive when he would least of all expect it; therefore, in pushing up, bringing down the legs, or extracting the body, it should be handled with the greatest delicacy.

11. When the hand is within the pelvis, it should not always be moved in the line of the umbilicus, but rather towards one side of the spine, by which more room is gained, and the prominent angle of the sacrum avoided.

12. The hand should be passed as far as the middle of the child's body, before attempting to search for the feet; or before attempting to break the membranes, should these remain entire, till the aperture of the uterus will admit of the hand.

13. If the hand cannot pass the presenting part of the child to come at the feet, instead of violently pushing back, the part should be as it were lifted up in the pelvis, and moved towards a side; by which means difficulties may be surmounted, and great danger often prevented.

By attending carefully to the above rules, laceration of the uterus, floodings, convulsions, inflammations, and their consequences, may be prevented; accidents that frequently happen in the hands of ignorant rash operators.

CASE I.—The arm presenting. The right is to be distinguished from the left by laying hold of the child's hand, in the same manner

as in ſhaking hands; and thus the general poſition of the child may be judged of.

When the accoucheur is called in early, the reduction is generally practicable; but if the arm protrudes through the vagina, and the ſhoulder be locked in the pelvis, it is needleſs, by fruitleſs efforts, for the accoucheur to fatigue himſelf, and diſtreſs his patient, to attain a point by which he will gain no very material advantage; as the hand can be paſſed into the uterus by the ſide of the child's arm, which will, of courſe, return into the uterus when the feet are brought down into the vagina.

In order to make the delivery, the hand of the accoucheur, well lubricated, muſt be conducted into the uterus by the ſide of the child's arm, along the thorax, at the oppoſite ſide of the pelvis where the head lies; if any difficulty occurs in coming at the feet, this hand muſt be withdrawn, and the other introduced in its ſtead; and if ſtill the hand cannot eaſily paſs beyond the child's head or ſhoulder, the preſenting part muſt be raiſed up, or gently puſhed to a ſide, that one or both feet may be laid hold of, which muſt be brought as low as poſſible, puſhing up the head and ſhoulders, and pulling down the feet alternately, till they advance into the vagina, or ſo low that a nooſe or fillet can be applied; and thus by pulling with the one hand by means of the nooſe, and puſhing with the other, the feet can be brought down and the delivery finiſhed, however difficult.

The method of forming the nooſe is by paſſing the two ends of a tape or garter through the middle when doubled; or, ſhould the garter be thick, by making an eye on one extremity, and paſſing the other end through it: this, mounted on the points of the fingers and thumb of the accoucheur's hand, muſt be conveyed into the uterus, paſſed over one or both feet and ankles, and ſecured by pulling at the other extremity.

Case II.—The ſide. This is diſcovered by feeling the ribs.

Case III.—The back. This is diſcovered by feeling the ſpine.

Case IV.—The belly. This is known by the funis.

Theſe caſes occur rarely, as the uterus muſt with difficulty admit of ſuch poſitions. When any of theſe parts do preſent, the child ſeldom paſſes any part of the brim of the pelvis, and is, in general, more eaſily turned than in ſeveral poſtures in which it may offer. The belly, from the difficulty with which the legs can be bended backwards, except the child be flaccid, putrid, or before the time, will very ſeldom directly preſent; if ſo, it will be early and readily diſcovered by the prolapſus of the funis, and there will be no great difficulty to come at the feet, and deliver. The rule in all theſe caſes is, to paſs the hand into the womb in the gentleſt manner poſſible, and to ſearch for the feet and bring them down.

CLASS III.

When the child lies longitudinally in the uterus, with the arm or ſhoulder preſenting, and the head more or leſs over the pubes, or laterally in the pelvis, the feet towards the fundus uteri, the waters evacuated, and uterus contracted round the child's body; theſe are the moſt difficult and laborious of all the caſes of preternatural labours. Here the protruding arm ought, if poſſible, to be reduced, and the head brought into the pelvis; for unleſs the child be very ſmall, it is impoſſible for the head and arm to paſs along together.

In order to effect the reduction of the arm, different inſtruments have been invented; but the hand of the accoucheur is preferable to every thing of this kind, whether of ancient or modern invention. This, conducted by the arm that protrudes, muſt be inſinuated through the vagina into the uterus, as far as the ſhoulder of the child, which if the accoucheur can raiſe up, he will generally ſucceed in reducing the arm. Should this method fail, he muſt attempt to puſh up the fore-arm at the elbow; but, in bending it, muſt be very cautious to avoid overſtraining or diſlocating the joint. In whatever manner the reduction is accompliſhed, if any method proves ſucceſsful, the arm muſt be retained till the head, by the force of natural pain, enters the pelvis, and prevents its return; otherwiſe the arm will deſcend as often as it is reduced.

But if the attempts for reduction prove impracticable, the woman muſt be placed on her knees and elbows, and the accoucheur, with great deliberation, muſt endeavour gently to ſlide up his hand between the uterus and child as far in the uterus as poſſible, to lift up the head and ſhoulders, and ſearch for and bring down one or both feet, in the beſt manner the various circumſtances of the caſe will admit of. As ſoon as they can be laid hold of, they muſt be gradually brought down into the vagina, ſo low that the nooſe can be applied over them, which muſt be fixed and pulled with the one hand, while the head and upper parts of the body are raiſed and gently puſhed up with the other.

Should the arm have been long protruded without the os externum, much ſwelled, and cold; the waters drained off; the uterus ſtrongly contracted; and the poſition of the child ſuch as to render it impracticable either to reduce the protruded limb or to ſearch for and bring down the feet; the head, if eaſily come at, muſt be opened and extracted with the blunt hook or crotchet; or a crotchet muſt be fixed amongſt the ribs, and the breech or feet thus pulled down.

Should the pelvis be very narrow, and unſurmountable difficulties occur, the arm muſt be twiſted off at the elbow, though this expedient is rarely neceſſary; and the delivery muſt in general be

accompliſhed as the prudence and judgment of the operator can beſt direct; always remembering, when one life muſt fall a ſacrifice, that the tree muſt be preſerved at the expence of the fruit.

In this, as in other caſes, the ſwelling and coldneſs of the arm, and even want of pulſation in the artery, are not infallible ſigns of the child's death; and ſhould this even be ſo, it makes little difference in the mode of delivery, unleſs that it will lead us to pay all our attention to the mother: For a living child gives no more aſſiſtance in the birth than a dead one, whatever authors have ſaid to the contrary.

When both arms preſent, the delivery muſt be conducted in the ſame manner as when one only preſents. The former caſe is leſs difficult than the latter, as the head ſeldom advances far when both arms fall into the paſſage, ſo that they can either be reduced, or there is eaſy acceſs to come at the feet to bring them down and deliver.

CLASS IV.

When the membranes remain entire, till the ſoft parts are ſo much dilated that the hand will readily find admittance; or when the hand can be paſſed within the cavity of the uterus immediately after the rupture of the membranes, ſo that part of the water may be retained; the delivery may be accompliſhed, in the moſt troubleſome preternatural caſes, with the greateſt ſafety and expedition. But when the waters have been long evacuated, and the uterus cloſely contracted round the body of the child, the caſe will prove laborious to the operator, painful and dangerous to the mother and child.

When there is reaſon to ſuſpect that the child lies acroſs, which can often be aſcertained, either by feeling the preſenting part through the membranes, or by ſome of the ſigns of preternatural labours already mentioned; the woman ſhould be managed in ſuch a manner, that the membranes may be preſerved entire as long as poſſible: for this purpoſe ſhe ſhould keep quiet in bed, and her poſture ſhould be ſuch as is leaſt favourable for ſtraining, or exerting force during the pain; ſhe ſhould be touched as ſeldom as poſſible, till the os internum be ſufficiently dilated. The accoucheur ſhould then introduce his hand in a conical form, well lubricated, into the vagina, and through the aperture of the internal orifice, inſinuating it between the uterus and the membranes till it advances almoſt as high as the fundus uteri, when he muſt break the membranes, by pinching ſome part of them between a finger and thumb, or by forcibly puſhing a finger through them; he muſt then ſearch for, and endeavour to lay hold of, one or both feet, and deliver.

Should the membranes be ruptured in the attempt, he muſt be ready to run up his hand as quickly as can be done with ſafety; when, part of the waters by his arm being retained, the operation

of turning will be facilitated. Should the placenta adhere on that ſide of the uterus where the hand is paſſed, it muſt again be withdrawn, and the other hand be introduced in the oppoſite ſide.

Floodings.—It has been already obſerved, that a flooding ſeldom proves fatal to the mother before the ſeventh month of pregnancy; after which period, from its duration or exceſs, the life of both the mother and child may ſuffer. Should, therefore, a flooding attack a woman in the two laſt months of pregnancy, from whatever cauſe it may ariſe, and whether attended with labour pains or not, if the hæmorrhagy be ſo conſiderable that ſhe is ready to ſink under it, and that cold applications and other means of checking the evacuation ſhall fail, the woman muſt be placed in a proper poſture, her friends prudently apprized of her danger, and the delivery muſt be immediately performed, by ſtretching the vagina and os uteri, till the hand of the operator can eaſily gain admittance to break the membranes, catch hold of the feet, and extract the child.

If it can poſſibly be prevented, the membranes in flooding caſes ſhould never be broken till the aperture of the uterine orifice will freely admit the hand to paſs, that, after the evacuation of the waters, the accoucheur may have it in his power either to make the delivery or not according as the effuſion continues or abates.

Soon after attempting to ſtretch the parts, ſhould the labour pains come on, the waters begin to be collected, and the uterine hæmorrhagy diminiſh, the accoucheur muſt then withdraw his hand, and manage the delivery according to circumſtances. And if, for inſtance, the child preſents naturally, the delivery muſt be truſted to nature; otherwiſe, if the flooding continues, or the child preſents acroſs, the accoucheur muſt perſiſt in his work, going on ſlowly, and with the utmoſt delicacy, till he be able to reach the feet, to bring them down, and deliver; always remembering, during this proceſs, that the ſtrength of the woman, by proper nouriſhment, be ſupported.

But ſhould the placenta adhere to the cervix, or upon the os uteri, the greateſt danger is to be dreaded, for thus the flooding will commence from the moment the os uteri begins to ſtretch, and will increaſe ſo rapidly, that the woman, if not ſpeedily delivered, muſt inevitably ſink under it. The whole body of the placenta, in ſuch caſes, is ſometimes ſeparated when the labour has made but little progreſs; ſo that the woman will often periſh whether delivery be attempted or not. As this, however, is the only expedient by which her life, and that of the child, can be ſaved; in every caſe where the placenta preſents, which the accoucheur will readily diſcover by the touch of the ſoft pappy ſubſtance of that body, he muſt immediately place the woman in a proper poſture, inſinuate his hand gently by the ſide of the protruding placenta, break the membranes, ſearch for the feet of the

child, and bring them down, so that the delivery may be finished with all possible expedition; for, in this unhappy case, a few minutes' delay may prove fatal.

The after-birth ought never to be extracted before the child, if it can possibly be avoided.

After delivery, time should be given for the uterus to contract, that nature may thus throw off the placenta, which never ought to be hurried away, unless the continuance or a recurrence of the hæmorrhagy render it necessary.

Prolapsus of the funis.—Difficulties arising from the funis falling down into the vagina, and presenting along with some part of the child, may, in this class of the division of preternatural labours, be included.

A pressure on the chord, in such a degree as to interrupt the circulation, must infallibly destroy the life of the child: hence a coldness and want of pulsation in the chord is the truest criterion of the death of the child; and hence, in every case where the chord is prolapsed before any bulky part of the child, if the delivery be not accomplished with expedition, the child will perish. This is only to be prevented by replacing the chord, and retaining it above the presenting part, till this last, by the force of labour pains, be so far advanced as to prevent the return of the former; or the child must be turned and brought by the feet, provided this can be done with safety to the mother. But it is often difficult to succeed in the attempt of the one or other; and, if the woman has strong pains, such attempts are not to be hazarded, as the consequences may prove fatal.

When the accoucheur is thus situated between two puzzling difficulties, the preference must always be given to the mother. If the child be small, and the pelvis well formed, which may be known by the history of former deliveries, and if the labour goes on quickly, the child will generally be born alive; but if, on the contrary, the child be above the ordinary size, and the pelvis rather narrow, turning will prove a dangerous operation to the mother, and there is little prospect of saving the infant by this means.

SECT. I. CASES *of* PRETERNATURAL LABOUR.

The facts recorded by Dr. Smellie on this interesting division of the practice of Midwifery, are too valuable not to deserve a preference to any of modern times: we shall therefore present them to the reader in a regular series, leaving it to his discernment to note the deviations from modern practice which may occasionally present themselves.

Preternatural Labours, in which the Legs or Breech presented instead of the Head.

CASE I.—"In the year before I settled in London," says Dr Smellie, "a midwife sent for me to assist in a labour. The legs of the fœtus were forced down through the os uteri into the va-

gina immediately after the membranes broke, and ſhe had tried to bring down the child's body by pulling.

"As I ſuſpected from this information, that the body lay double in the uterus, which prevented the breech from coming down in the former trial, after ſtretching the os externum, I introduced my hand into the vagina, and up along the thighs of the child to within the os internum, where I found the breaſt and chin ſqueezed down at the left ſide, juſt above the brim of the pelvis.

"After conſidering the caſe, I took hold of the feet with my other hand, which were without the os externum, and pulled at them; while at the ſame time I puſhed up the breaſt and head to the fundus uteri, with the hand that was introduced at firſt.

"Finding that the breech came lower, and that the puſhed-up parts did not return, I withdrew my hand from the uterus, and having wrapped a cloth round the legs, pulled at them with both hands, till I brought down the breech to the os externum.

"As the belly of the fœtus was to the left ſide of the pelvis, I turned it back to the ſacrum; and although I tried to deliver without bringing down the arms, yet I found the ſhoulders ſo large, that I was obliged to introduce a finger over one of them, and along the arm.

"This I ſlipped down gently into the concavity of the ſacrum, and brought it out through the external parts with a ſemicircular turn, to prevent a fracture in the extraction.

"Then I brought the body lower, but finding that the head ſtopped at the upper part of the pelvis, I inſinuated my hand up along the breaſt, and introduced a finger into the mouth, and by pulling gently, brought the forehead into the concave part of the ſacrum: being afraid of overſtraining the under jaw, I quitted that hold, and placed a finger on each ſide of the noſe; then I laid the body of the child on that arm, and by ſlipping the fingers of my other hand over the ſhoulders, and on each ſide of the neck, I got the head ſafely extracted.

"That I might operate with greater eaſe, both to myſelf and the patient, ſhe was at firſt laid on her back acroſs the bed, her breech to the ſide, and two women ſupported her legs: in delivering, I at laſt was obliged to raiſe up the child's body, ſo as to bring out the head with a half-round turn upwards, to prevent the perinæum's being tore, as theſe parts were forced outward in form of a large tumor; by which precaution, both the mother and child were ſafely delivered."

Case II.—"Being ſent for to a woman in labour, the midwife told me, that at her firſt examining, and even after the membranes were broken, ſhe could not diſtinguiſh what part of the child preſented, until the pains forced it lower and lower; and then, both by the diſcharge of the meconium and the touch, ſhe found that the breech preſented; but having waited ſeveral hours

in expectation of the delivery, and at last being afraid of the child's life, she had recourse to my assistance.

" On examining I found the nates at the lower part of the pelvis, and in a right position with the thighs to the sacrum: as the pains were now weak, and expecting it would require considerable force to deliver the child, I caused the patient to be laid in a supine position, as in the preceding case.

" In time of the pains, I gradually stretched the frenum labiorum with my fingers; then standing up, turning the back of my hand downwards, and introducing my fingers betwixt the breech and the os coccygis, I tried to raise up the nates, so as to be able to bring down one or both legs.

" Although I failed in this attempt, and could not raise the nates so high as to allow my hand to pass up into the uterus; yet this effort gave more room, by stretching the parts, and allowing an easier passage for the child, which I found was very large; and indeed this was the sole occasion of the difficulty.

" After bringing down my hand, I introduced the fore and middle finger of each into the outside of each groin, betwixt the thighs and body of the child: with the assistance of this hold, and pulling from side to side, and upwards, to prevent the perinæum's being tore, I at last brought the hips through the os externum, at several efforts, and by the assistance of the weak pains: after which, and with much fatigue, I brought down the arms, and delivered the head as in the former case.

" Although I used all precaution in delivering the head, and indeed exerted less force than in the former case, yet the child was dead: a circumstance which seemed to proceed from the long pressure of the funis, by its being tumefied and squeezed of a flattish form near the navel."

Case III.—" I was called, about five in the morning, to a patient that had bespoke me to attend her in labour of her first child; she had been in labour most part of the night, and did not send till the membranes were broken.

" The breech presented; the thighs were to the right side of the pelvis: the right hip was forced down in the back part, and the left stuck above the ossa pubis.

" As this was her first child, I waited with patience, in hopes that both hips would advance gradually, and stretch the vagina and external parts; but the meconium having come down in great quantity, the woman also being much fatigued, and the pains abating about noon, I was afraid, if I delayed assistance longer, the child would be lost.

" Finding that the delivery was principally retarded by the hip sticking above the pubis, I dilated the os externum a little, and after introducing two of my fingers betwixt the pubis and the hip, pressed and moved it in time of a pain to the right side of the pelvis: this endeavour immediately altered the former position, by

bringing the thighs to each ſide of the ſacrum. The child being ſmall, was forced lower and lower every pain; the body and head were delivered, without my being obliged to bring down the arms, as in the former caſe.

"The woman lay in bed on her left ſide; and as the head was ſmall, I delivered it according to Daventer's method, by fixing the fingers of my right hand over the ſhoulders, and on each ſide of the child's neck; then taking hold of the body with my left, and pulling with both hands backwards to the patient's breech, I brought out the occiput and vertex from below the pubis, while the chin was within the lower and back part of the vagina, to prevent tearing the fourchette, which felt very rigid.

"The child lay ſome time breathing but ſeldom; but at laſt, recovered more ſtrength."

CASE IV.—A phyſician, of Stamford, was called to a woman aged thirty-two, having gone her time with her firſt child, ſome ſlight pains came on, and the waters broke; after which the pains went off for a fortnight, then came on again, and the fæces of the child were obſerved by the midwife to come away.

"Upon examination," ſays he, "I found one of the hips preſent; but the os internum not being open enough, and the pains only ſlight, I directed ſome laudanum, with tincture of caſtor, and warm ſuppings, deſiring the woman to compoſe herſelf and if any change happened to ſend to me again.

"In a few hours the pains were ſo increaſed, and the os internum ſo opened, that when I was fetched back I found the nates of the child ſqueezed out, which I helped forward to the hams, then got out the legs, and after giving a quarter turn to bring the head right in the pelvis, fetched down the arms, delivered the head, and with a little aſſiſtance the placenta.

"No pulſation could be perceived in the umbilical cord, though the mother thought ſhe had felt the child ſtir that morning; but probably the ſame preſſure on the abdomen of the child, which had brought away the meconium, ſtopt at the ſame time the circulation in the navel-ſtring.

"Every thing went on right after delivery, by the help of a few more drops of the tincture, and the woman got well at the uſual time."

CASE V.—Dr. Smellie aſſiſted in a caſe much of the ſame kind as the former, but was obliged to bring down the body in a different manner: for, when called, he found the breech preſented low in the pelvis, and the thighs to the left ſide. "The midwife told me," ſays he, "that it had been long in that poſition, that ſhe could not move it, after repeated trials and ſtrong pains. As the patient lay on her left ſide, I tried to raiſe the breech with my right hand, ſo as to bring down the legs; but the contraction of the uterus being ſo great againſt me, I could not move it up ſufficiently for that purpoſe: however, by this trial I did ſome ſervice,

in opening the os externum, and likewiſe felt a pulſation in the navel-ſtring, as it lay ſecure betwixt the thighs, which kept it from being preſſed. The iſchium being much lower than the pubis, I durſt not venture to bring down the thighs at that part, neither did I chooſe to pull the body further down to make more room, for fear of engaging the ſhoulders too low in the pelvis, which would prevent my turning the fore parts of the child to the back parts of the uterus; but I turned up the right thigh from the iſchium to the pubis, by which means I eaſily got hold of the joint at the knee, and brought down that leg, and after that delivered the other leg in the ſame manner. I had tried before this to turn the breech with my fingers of both hands, on the outſide of the groins, both backwards and forwards; but the breech being large, and firmly locked in the pelvis, I could not move the thighs in that manner either to the ſacrum or pubis. After I brought down the thighs and breech to the os externum, a ſtrong pain came on ſooner than I expected, and puſhed down the body to the ſhoulders, before I was aware, into the pelvis. After wrapping a cloth round the child's hips, I tried to turn the fore parts to the back parts of the patient, but could not move it, till I forced up the body again to the hips; by that means the ſhoulders were diſengaged, and the belly yielding eaſier, I got it turned backwards. I then delivered the body and head, as in the ſecond caſe; but the laſt coming more difficultly, I was obliged to bring down both arms before I could extract the ſame with ſafety."

Case VI.—" I was beſpoke to attend a woman in her firſt child. When I was called, I found that the membranes were puſhed down with the waters in time of a pain, and that the mouth of the womb was very thin, and open about the breadth of half-a-crown. As the pain went off, and the membranes grew lax, I puſhed up my finger further, and found ſome part of the child through them; and although it felt round like the head, yet it was ſofter at ſome parts than others, and more unequal, which made me ſuſpect, as it was ſo high up, that it might be the ſhoulder: however, as this was her firſt child, and the parts were very ſtrait, and the patient very young, I thought it more adviſable to wait with patience, to let the parts open in a ſlow and gradual manner by the membranes and waters. This being in the evening, I left her, and called again about eleven that night. The pains had been but ſlight, and there was but very little alteration in the mouth of the womb; only I found that the membranes were puſhed further through it. I could now more diſtinctly feel the part that preſented, and was pretty certain that it was not the head. I wanted the labour to go on ſlowly, to allow time for ſoftening, and ſtretching the os uteri: I was alſo afraid, if the labour was hurried on too faſt, eſpecially as I found the membranes puſhing down of a longiſh form, that they would break too ſoon, or be-

fore the os uteri was fully opened. I ordered an anodyne draught, and desired her to go to bed, and to take all the rest possible. In order to amuse her, and keep her from thinking too much upon her situation, I told her that the labour was scarcely begun, and desired the nurse to send for me as soon as the waters came off: however, as the case might turn out difficult for the patient, and dangerous for the child, if not rightly managed, I staid all night without her knowledge, and went to bed in the house. I was not awaked till the membranes broke, about six in the morning, when I examined, and found the os uteri considerably more open, and not so rigid, and the breech pushed down into it, with the thighs to the pubis. The nurse informed me, that the patient had slept betwixt the pains, which grew gradually stronger; but she had not had any since the waters began to come off. I desired she would still keep quiet in bed, thinking that now, perhaps, her sleeps would be longer and more refreshing, if she continued any time free from pains. Accordingly she enjoyed a good deal of sound sleep, during which she had some slight pains, and some of the waters were discharged.

"About ten, the pains grew stronger and more frequent, by which the breech was forced down, and gradually dilated the os uteri to its full extent. I then began to stretch the os externum gently every pain, that I might assist the delivery with greater ease, to prevent the child's being lost by its stopping too long, when come down to the lower part of the pelvis.

"As the breech advanced further, the meconium began to be discharged. The middle of the thighs being then down at the lower part of the pubis, I introduced my finger betwixt them, up to the belly, and felt the funis, with a pulsation in it. I then introduced a finger of each hand to the outside of each groin, and helped down the hips lower, till I felt the hams at the under part of the pubis; then taking hold of one of them with the fingers and thumb of each hand, I brought down the legs slowly, first one, and then the other. The limbs being slippery, I introduced a cloth betwixt them and my fingers, to prevent their slipping, and then turned the fore parts of the child to the back parts of the uterus. I had several times found, that after I had turned the child in that manner, the forehead, instead of being backwards to the side of the sacrum, was towards the groin, and brought down with great difficulty in that position, unless I could turn it more backwards, by pressing it with my fingers: in order to prevent this difficulty, I turned the body a quarter more, which brought the forehead backwards, as above, and then delivered as in the former cases. The child was alive."

Case VII.—"I was called by a midwife to a case where the breech presented much in the same manner as the former. It was the woman's first child; and before I was called she had

been many hours in labour after the membranes were broken. The thighs were towards the pubis, and the breech was come down to the lower part of the vagina: the perinæum and fundament were puſhed out in form of a large tumor by the breech, which had ſtopped there for ſome time, and the woman's pains were grown weak, and ſeldom. As ſhe lay on her ſide, I dilated the os externum gradually during every pain; and when I could introduce all my fingers, I turned the back of my hand towards the perinæum, to raiſe the breech; but the woman ſhrinking away from me, and altering her poſition, I turned her on her back, and ſhe being firmly held and ſupported by aſſiſtants, I proceeded without much interruption.

" Having dilated the parts, I applied a finger to the outſide of each groin, and tried to help along the breech; but could not move it, after ſeveral efforts. I tried to puſh up the breech, and bring down the legs, but could not raiſe it above two inches. I afterwards waited for ſome time, to ſee if the pains would puſh the breech further, eſpecially after the parts were ſo much opened. Finding both them and the aſſiſtance of my fingers ineffectual, and the woman much exhauſted, I introduced the large curve of the blunt hook with my left hand, betwixt the fingers of my right, along on the left hip, and ſlipped the point in betwixt the thigh and the body of the child, till I found the point paſt the inſide of the groin, betwixt the thighs; then taking hold of the ſmall end of the hook with my right hand, and applying the fingers of my left hand to the outſide of the oppoſite groin, I gradually brought the breech lower; but finding it again ſtop, and that the left hip was brought further down by the curve than the right, I changed it to that ſide. After repeated trials, I could not deliver the breech, nor bring the body ſo low down as to manage the legs. I now withdrew the hook, and with a good deal of difficulty, paſſed a garter betwixt the thighs and body, by the help of which the parts advanced, till the joint of the ham came below the pubis; then bringing down the legs and thighs, and wrapping a cloth round them, with a good deal of difficulty I turned the back parts of the child to the fore parts of the uterus. I tried to give a quarter turn more, with the hip up towards the pubis, but could not move it further. I therefore began to pull along the body of the child, which required greater force than I expected; but at laſt I delivered the belly, which felt very large; upon which, the ſhoulders and head came eaſily along.

" Although I felt (from my not being able to give the hips the quarter turn) that the chin, inſtead of being at the ſide of the pelvis, was towards the left groin, yet, as the head was ſmall, I moved it backwards, and with my finger in the mouth, brought the forehead to the hollow of the os ſacrum, and delivered as in the former caſes. When I examined the child, I found that the

whole difficulty proceeded from its having been dead, ſo that the belly was very much ſwelled; a circumſtance which I did not ſuſpect, as both the woman and midwife had aſſured me they felt the child ſtir; however, it had certainly been dead ſeveral days, for the ſcarf-ſkin was livid, and ſtripped off in ſeveral places."

CASE VIII.—" Being called to a woman whoſe former labours uſed to be pretty eaſy, the midwife told me, that one of the hips preſented; and although the mouth of the womb was largely open, and the patient had been in ſtrong labour, yet the other hip did not advance, but ſtuck above the ſhare-bone. I found the left breech puſhed down to the middle and back part of the pelvis, and pretty much ſwelled; and perceived that the thighs were to the left ſide, and the right hip above the pubis, as the midwife had ſaid. As the woman had been much fatigued, and her pains were grown weak, I introduced my right hand, contracted into a conical form, into the vagina, and puſhing up the breech higher, made room for my hand to advance along the thighs, towards the fundus uteri: finding the legs up towards the fundus, and ſome water ſtill retained in the uterus, I eaſily folded down the legs, and after I had brought them and the thighs without the os externum, I turned the belly to the ſacrum, and delivered the child, as in the firſt caſe."

CASE IX.—" I was called by a midwife to a woman who was in labour of her firſt child. The right hip was puſhed down at the right ſide of the pelvis; the woman had been long in labour; a great many cloths had been wetted with diſcharges of blood from the uterus; and although it flowed gradually, and in ſmall quantity, yet the woman was conſiderably weakened.

" As the fore parts of the child were towards the abdomen, I placed her on her ſide, and gradually, as in the former caſe, introducing my hand into the vagina, raiſed the breech: after I had inſinuated it up along the left ſide of the child, I ſtood more behind the woman, and turning my hand to the fore part of the uterus; but the uterus being ſtrongly contracted, I was obliged to advance very ſlowly, dilating as I advanced, and then could only bring down the left foot. I was afterwards obliged to puſh at the breech, and pull at the foot, alternately, before I could bring down the leg and the thigh. This being effected, I wrapped a cloth round the leg, and took hold of it with my right hand, while at the ſame time I applied the fingers of my left above the right haunch, on the outſide of the groin; and by pulling with both my hands, brought down the body, till the ham of the right leg was deſcended below the pubis. I tried to turn the fore parts of the child backwards, but could not till I brought down the the right leg.

" Finding the child was large, and expecting it would take a good deal of force to deliver the head, I altered the woman's po-

fition, by turning her on her back; then wrapping a cloth round the thighs and breech, having already turned the fore parts of the child to the back part of the uterus, I brought it down to the fhoulders; but finding it ftopped at the head, I introduced my fingers and hand along the breaft, and difcovered that the obftruction was from the forehead's refting againft the left arm of the child at the left fide of the facrum. I then brought down that arm, introduced two fingers into the mouth, and delivered as in the former cafes, though not without a great deal of force: for after I had got the fingers of my right hand into the mouth, and laid the child's body on that arm, and taken a firm hold over the fhoulders with the fingers of my left hand, I was obliged to increafe the force every attempt. Being afraid I fhould overftrain the jaw, I withdrew my fingers out of the mouth, and tried Daventer's method, by preffing down the fhoulders, fo as to bring the occiput from below the pubis; the head, however, being too high to be moved by that method, I again had recourfe to the former, but advanced my fingers higher, placing them on each fide of the nofe: I pulled fo long, and with fo great force, before the head was delivered, that I was furprifed to find the child alive."

Case X.—" I was befpoke to a woman who had fuffered very much in her former labours from the pelvis being diftorted. When I was called to her about fix in the morning, I found the mouth of the womb largely open, and the membranes pufhed down with the waters in time of a ftrong pain. As the pain went off, and the membranes became lax, I felt plainly through them, that the head did not prefent; but was uncertain whether it was the breech or the fhoulders: I could juft touch with my finger the projection of the laft vertebra of the loins with the upper part of the facrum. Though concerned that the child did not prefent fair, I was pleafed to find that the pelvis was not quite fo narrow as it had been reprefented.

" About an hour after I came, and before the membranes broke, I examined, and found them pufhed further down; and as the pain went off, I found that the breech prefented. Placing the woman in a convenient pofition, as defcribed in Collect. xxv. No. 1, Cafe 1, with her head and fhoulders lower than her breech, I gradually opened the os externum, and introduced my hand into the vagina as a pain went off. Endeavouring to raife the breech, my fingers broke through the membranes, and as a large quantity of waters were retained, I eafily brought down the legs, which were to the back parts of the uterus.

" After I had brought down the body to the fhoulders, I tried to bring the head into the pelvis, by pulling in different directions, viz. upwards, downwards, and from fide to fide; but finding I could bring it no further, I introduced my fingers and hand in a

flattened form betwixt the breaſt and back part of the os externum. In advancing further, I felt the chin and face at the upper part of the os ſacrum, the forehead retained above the diſtorted part, formed by the laſt vertebra of the loins, and the forementioned bone: I tried to pull the forehead down with my fingers placed on each ſide of the noſe; but could not move it: then I pulled down the left arm of the child, and preſſed the face and forehead to the left ſide of the pelvis, where there was more room. I made a ſecond effort to bring down the head in the ſame manner as before; but as it ſtill ſtuck, I pulled down the right arm. In a third trial, I brought the forehead down into the hollow of the os ſacrum; delivered the head, and ſaved the child, contrary to expectation."

CASE XI.—"I was called by a midwife, and found the breech preſenting, and the pelvis diſtorted. The midwife told me, that the woman's former labours had been very difficult and tedious; but now, as the breech preſented, ſhe was afraid the difficulty would be greater; obſerving, that ſhe had ſent for aſſiſtance as ſoon as ſhe found (after the waters came off) the poſition of the child. As I found the thighs were towards the pubis, I kept the woman as ſhe was then, lying on her left ſide, and brought her breech nearer the ſide of the bed. Introducing my hand into the vagina, I puſhed up the breech of the child, and advanced along the fore parts of the uterus, to ſearch for the feet; but, finding a greater reſiſtance than I expected from the uterus and child, and perceiving the head and ſhoulders of the woman lay high, I turned her from the ſide poſition to her knees and elbows, without bringing down my hand, by which means her breech was raiſed higher than the body. I found the reſiſtance diminiſhed, and brought down the legs; then turning her to her back, brought down the body. After I had turned the fore parts of the child to the back parts of the uterus, I introduced my fingers to the face, as in the former caſe. Finding it to the left ſide of the projection at the upper part of the ſacrum, and the right arm lying before it at the left ſide of the pelvis, I firſt brought down that, and then helped down the forehead; but before I could deliver the head, I was obliged to bring down the other arm, and ſaved this child alſo, although a good deal of force was uſed to deliver the head.

"Five minutes elapſed before the child breathed, and it continued much longer breathing weakly; but by the uſe of ſtimulants it began to cry, and continued to cry inceſſantly till one of the women obſerved a large ſwelling betwixt the left ear and temple. This I immediately preſſed with my finger, on which it ceaſed crying; but in taking them off it began again, and the ſwelling that ſubſided on preſſure returned. To remedy the complaint, I dipped a thick compreſs in a mixture of oil, ſpirits, and vinegar,

and applying it to the tumor, desired the woman that held the infant, to keep her fingers pressed on the place for a long time. When I examined it next day, the swelling was gone; and it appeared to have been that part which stopped so long at the projection of the upper part of the sacrum, before the head was delivered."

Case XII.—"I was called, in a great hurry, to a woman in the same street. On examining, I found the body of the child delivered, and only the head remaining unextracted. The patient was pretty corpulent, and begged that I would relieve her out of her misery, and if possible save the infant.

"I felt no pulsation in the funis umbilicalis; but as that might have been just stopped, I immediately, and with great ease, delivered the head, by introducing my hand betwixt the neck of the child and the back part of the pelvis. I slipped two fingers into the mouth, which was to the left side of the sacrum; by that hold I brought down the face and forehead, turning them at the same time a little more backwards, into the concave part of the sacrum: then placing the fingers of my other hand over the shoulders, and on each side of the neck, and raising up the body, as the woman was in a supine position, I delivered the head, as described in Case I. and II. under the present head.

"Two of the patient's sisters who were present, finding the child was dead, expressed their resentment against the midwife, and ordered her out of the room: however, I interposed, and desired that she might first assist in laying the woman right in bed; then I begged to hear the progress of the labour.

"As she found the breech present, and had used more force than is commonly exerted, the friends had been alarmed; but were satisfied for a little, when she assured them that the child came in the natural way, and that the patient and child would be soon and safely delivered.

"She at first brought down the body and arms easily, with the assistance of the strong pains, but with all her strength she could not deliver the head; and at last was obliged to own to the attendants that the child came wrong; though not before she had made several trials after the first alarm."

Case XIII.—"I was called by a midwife, who told me that the body of the child had been delivered an hour ago; but not being able to bring out the head, she had desired my assistance. As the pains were now grown stronger, she begged I would wait a little, and if the patient was not soon delivered she would introduce me to her. I enquired if she had felt any pulsation in the funis, after the body came down; she acknowledged that she had felt it at first, but it had stopped long ago.

"She was called into the room in a hurry, and the head was immediately delivered by the pains.

" About an hour after I was ſent for by the ſame midwife to another woman, where the breech preſented, and who formerly was uſed to have tedious labours.

" I had told the midwife on the former occaſion, that ſhe had loſt the child by not ſending ſooner, and deſired ſhe would never call me again in ſuch a manner. This reproof had the deſired effect, for ſhe ſent for me in this caſe immediately on the waters coming off, and when ſhe was certain that the breech preſented.

" Finding the pelvis narrow, and that the breech did not advance with the aſſiſtance of the ſtrong pains, I brought down the legs; but as the patient did not lie in an advantageous poſition, as deſcribed in Caſe I. of this collection, I cauſed her to be turned to that poſture, and delivered the body and head of the child, as in the two laſt caſes; but with greater difficulty than any that I ever delivered in that manner, the child being alive.

" After the body and arms were brought down, by dint of many repeated efforts, I delivered the head; but in the mean time, imagined it was impoſſible the child ſhould be alive, as I found the neck was ſo overſtretched; and if it had not come along at the laſt effort, I was reſolved to have uſed the aſſiſtance of the crotchet.

" I ſtopped in the middle of theſe efforts, and attempted to extract with the ſhort ſtraight forceps; but the head was above the brim of the pelvis, and the curvature of the os ſacrum prevented their taking a proper hold, ſo as to be of any ſervice. This was the reaſon which prompted me to contrive a longer kind, the blades of which are curved to one ſide."

Case XIV.—" I was ſent for in a great hurry to a labour, where the midwife had delivered the body and arms of the child; but, after ſeveral trials, and the aſſiſtance of the pains, could not extract the head.

" The forehead was detained above the pubis. Finding it was not poſſible to move it backwards towards the ſacrum, as ſhe lay in a ſupine poſition acroſs the bed, I pulled the body of the fœtus downwards, and, at the ſame time, preſſed the chin with the finger of the other hand to the breaſt: by pulling up and down with both hands, I at laſt brought the forehead out from below the pubis, and delivered the woman of a dead child, though not without a good deal of force.

" I have had ſeveral caſes, in which the nates preſented, and the children, where ſmall, have been delivered ſafely with the labour pains; eſpecially when the fore parts of the fœtuswere to the back parts of the uterus, but commonly with more difficulty when in the above poſition."[1]

Case XV.—In this inſtance the breech preſented, a flooding came on after delivery, and the woman died. It is communicated

by a correfpondent of Dr. Smellie's, who was called to a woman that had mifcarried two years before, and fince that had been fubject to copious difcharges, high coloured and fœtid.

The membranes had been three days broken: he found the pains were but inconfiderable, and fome waters ftill drained away during each; being alfo high coloured and fœtid.

The os uteri was high up, thick, but little open; which prevented his knowing the pofition of the fœtus.

As the pains were faint, the child advanced very little in many hours; yet fhe complained as much as if fhe had been in ftrong labour; and the os uteri was fo extremely fenfible, that fhe could not bear the gentleft touch without fcreaming.

When the pains grew quicker and ftronger, fhe placed herfelf on her knees, at which time he found the nates prefented, and endeavoured to dilate the paffage; but although the pains were vigorous and forcing, the part came no longer, neither could he apply his fingers to the groins, to help the body along.

He then laid her in a fupine pofition; and after introducing his hand into the uterus, with great eafe brought down one leg, and finifhed the delivery.

The child at firft fhewed fmall figns of life; but afterwards recovered. The mother, foon after delivery, was feized with a flooding, which, notwithftanding all he could do, carried her off in an hour.

Dr. Smellie obferves on this cafe, that, "as the patient was not weak, and had ftrong pains, there was no occafion to force open the parts fo foon to bring down the leg: the child is feldom in danger of being loft, before the nates come down to the external parts: for it is fafer for the patient to allow them to open the os uteri flowly, than to endanger its being torn with the hand."

Case XVI.—A practitioner at Bofton, in Lincolnfhire, between eleven and twelve at night, was called to a woman who was fuddenly taken with labour pains when afleep in bed, and they had broken the membranes.

"She had a ftrong pain," fays he, "when I entered the room; but my coming in gave a check to them till fome time after.

"When I examined, the nates prefented at the lower part of the pelvis, and the pains being ftrong, I did not attempt to pufh up the breech, to bring down the legs; I only dilated the os externum, and foon after that, I was able to infinuate a finger into one of the groins; and in a little time, a finger of my other hand into the other groin; by which means, and the affiftance of the pains, I drew down the body to the hams, and extracted the legs.

"Having wrapped a cloth round the extracted parts, as the face of the child was towards the facrum of the mother, the delivery was foon finifhed, only it ftuck a little at the head, and the

placenta adhered to the back part of the uterus, but came off without much trouble.

"The child was a lufty girl; and although fhe did not at firft feem alive, yet in a little time after fhe began to cry.

"The patient, after being put in bed, was attacked with violent pains in her hips and body; on which I was again fent for. As the difcharges were fmall, I fent an anodyne mixture, which gave her immediate eafe."

CASE XVII.—"One of the gentlemen, and one of the midwives, that attended my lectures," fays Dr. Smellie, "were fent to one of the poor women, who was taken in labour in the eighth month of pregnancy.

"The os uteri was a little open; the membranes were forced down with the waters, and broke foon after they arrived; when finding that the child did not prefent in the natural way, they immediately fent for me.

"On examining, I found the os uteri thick and rigid; within it, on the left fide, an elbow; and on the right, one of the nates.

"The patient had, fome time before that, been much weakened by a quartan ague; her pulfe was low and weak, her body greatly emaciated, and fhe could fcarcely fpeak, or ftand upon her legs.

"Being informed, that fhe had taken little nourifhment for feveral days, I fent for and ordered her to take a little toafted bread and warm wine frequently, to recruit her ftrength and revive her fpirits.

"Having fent for my principal midwife, and the reft of my pupils, I defired her to keep the patient quiet in bed, which indeed was only a little ftraw laid in a cold garret; for at that time we were obliged to fmuggle our patients, on account of the barbarity of the church-wardens.

"In about four hours after this, the midwife fent for me; the woman was now much recruited by the nourifhment fhe had taken; for befides the bread and wine, fhe had alfo got fome broth; her pulfe was much ftronger, and fhe was able to walk about the room.

"After waiting fome hours longer, and confidering the woman had formerly eafy labours, I thought it was a pity to keep her longer in pain, as there feemed little hope of her being delivered without affiftance; for, in examining again, I imagined what I took for the elbow was a heel, and the other one of the fhoulders.

"Having placed the patient on her knees and elbows, according to Daventer's method, not indeed of choice, but from neceffity, for want of proper accommodation, and having her firmly fupported by the female affiftants, I gradually dilated the os externum, and, with fome difficulty, introduced my hand into the vagina. Then I found, with more certainty, that the fœtus prefented ac-

cording to my firſt opinion, viz. the hip at the right ſide, and the elbow, with the head above it, at the other ſide, within the os uteri. This I tried to ſtretch open; it was then about the wideneſs of a crown-piece, and could only receive the ends of the thumb and fingers contracted together, in a conical form; but the orifice felt ſo thick and rigid, that I could not, by ſeveral efforts, dilate ſo much as to be able to introduce my hand into the uterus. Although the patient bore it with a good deal of patience, yet it fatigued her ſo much, that I deſiſted, and was afraid of uſing greater force.

"The aſſiſtants ſeemed much ſurprized when I ordered the woman to be again laid down on her ſide, and did not attempt any more to deliver the child; but they were all ſatisfied, when I told them the danger of lacerating the uterus, and of the woman's dying in the operation, from her great weakneſs; and that as there was no flooding, it was much ſafer to continue giving her nouriſhing food; for although the child preſented wrong, yet when her ſtrength was recruited, the pains would come on ſtronger, by which ſome of the parts would be forced down, and gradually dilate the os uteri.

"I alſo obſerved, that if the labour ended as I had foretold, it would be of greater uſe to them than to have ſeen me run too great a riſque of the woman's life, and after all be foiled in the delivery.

"As her pains were weak, and at long intervals, I gave her a grain of opium to carry them off, and procure reſt, deſiring one of the midwives left with the patient, to give her a little broth frequently, and to ſend for me and the reſt of the pupils when the pains came on, and when ſhe found the os uteri more open.

"When we left the patient, it was eleven at night, and we were all called early next morning. By that time three of the gentlemen reached the place, the breech came down of a ſudden, and one of the pupils delivered the body and head with great eaſe, as the child was ſmall.

"When the reſt of the pupils arrived with me, we were informed, that the woman had been viſited with pains every now and then, and ſlept betwixt them, ſo as to be much refreſhed; after which ſlumbers, the pains had ſuddenly returned with greater vigour, forced down the nates, and opened the os uteri, which then felt ſoft and yielding. From the livid appearance of the child's body, and the ſtripping off of the ſcarf-ſkin, it plainly appeared, that it had been dead for many days. The woman recovered, though long in a weak condition."

CASE XVIII.—"A young woman going with her firſt child, of a weakly conſtitution, ſlender, and of a ſmall ſize, had taken very little nouriſhment during the laſt months of her pregnancy, and had ſwallowed ſeveral purging medicines, from a miſtaken

notion that ſhe was dropſical. Both her huſband and niece, who lived with her, died but a few weeks before ſhe was delivered; misfortunes which ſunk her ſpirits much, and increaſed her weakneſs.

" The labour was very ſlow and lingering, on account of her great weakneſs. The midwife could not diſcover any part of the child, till ſeveral hours after the membranes were broken, and then felt a foot, with a thigh lying a-croſs, at the upper part of the pelvis. She immediately ſignified the danger, upon which account I was ſent for. On examining, I found it in the ſame manner as the midwife had deſcribed: her pulſe was weak and low, and ſhe lay on her left ſide, with her breech near the ſide of the bed.

" As ſhe was ſo feeble, I choſe firſt to try if the body could be brought ſlowly along in that poſition. After ordering her a little warm wine, I introduced my right hand, which was anointed with pomatum, ſlowly into the vagina, during the time of a pain. I found the os externum ſufficiently dilated, and brought down by degrees the leg and thigh: but then perceived the child was ſo large, that it would not be poſſible to bring it along, unleſs I could bring down the other leg and thigh alſo. The thigh I had already brought down, filled up the pelvis in ſuch a manner, that I could not get my hand paſſed, without uſing too much violence: I then by degrees, juſt as a pain was going off, bent the leg to the thigh, and puſhed it up into the uterus.

" As the woman could not be kept firmly in this poſition, neither could I uſe ſo ſteady and equal a force as to bring down the body, and extract the head, as I could do while ſhe lay ſupine on her back, I had her placed in that poſition. She had not any flooding, except ſome little ſhews, as they are termed by the midwives; theſe are only a few ſtreaks of blood, which frequently proceed from ſtretching the os internum. I again introduced my hand into the vagina, then paſſed it along at the ſide of the pelvis, through the os internum, up into the uterus, and within the membranes. I kept my hand there a little to diſcover the poſition of the child exactly, which lay with its left buttock, thigh, and leg, over the brim of the pelvis, its belly towards the mother's, the right buttock to the woman's right ſide, and the ſhoulders up to the fundus uteri, with its head turned downwards to the left ſide. I had introduced my left hand, which luckily anſwered beſt in this poſition. I then raiſed up the buttocks, and turned the belly more to the right ſide, which brought my hand eaſier to the right thigh and leg of the child, which were extended up along the belly and breaſt. I laid hold of the leg, and folded it down along the thigh to the buttock; then brought it and the other leg into the vagina. The knees and thighs followed; but the child being large, and the woman ſmall, although the pelvis was well ſhaped,

according to her ſize, the breech and body of the child came along with great difficulty.

"I began to turn the belly of the child to the mother's back, before the breech was brought through the os externum: when the breech was turned to the os pubis of the mother, I gave it a quarter turn more, till its os ſacrum was to the right os iſchium, that this might turn the child's face, that lay to the right ſide of the uterus, to the back part. I then turned its os ſacrum back to her os pubis, and brought along the body, and the arms, and delivered the head as directed in the treatiſe, but not without a good deal of force. The child was alive, which I ſcarcely expected; the mother was ſo weak, that ſhe could give little aſſiſtance to help along the placenta, but it was at laſt ſeparated ſlowly, and ſafely delivered; ſhe luckily had no large diſcharge from the uterus, but was in a very low, faintiſh condition for ſeveral hours. The only thing that could be done now, was to give her a little warm wine and water frequently, and ſometimes a little weak caudle, to nouriſh and ſtrengthen her weak body. I ordered her belly to be kept moderately preſſed with an aſſiſtant's hands, till a bandage could be ſafely applied. She was ſo weak, that I thought it was better to go on in giving her nothing more than a little nouriſhment, eſpecially as it ſtayed on her ſtomach. For ſome weeks before, ſhe had thrown up moſt of her food, and could ſcarcely retain as much as to keep her alive: however, I ordered the following medicine; but only to be uſed if ſhe ſhould be taken with violent pains, or reſtleſſneſs:

(No. 11.) ℞ Sperm. ceti.
Theriac. venet. ā ℈j.
Syr. croci q. ſ. ut f. bolus ſumend. cum hauſt. ſequent. et rep. quarta quaq. hora, vel ut opus fuerit ad duas vices.

(No. 12.) ℞ Aq. cinnam. ℥iß.
Spirit. nuc. moſch.
Syr. papav. alb. ā ʒij. miſce.

"The next day I found her much better: ſhe had got ſome reſt; and the diſcharges were moderate, although ſhe had not taken the medicines."

Women in Labour, and the Children in a wrong Poſition.

CASE I.—"I was called in the night to a young woman, who lived at ſome diſtance in the country; and was told by the meſſenger, that ſhe was in the utmoſt danger from a violent colic.

"After my arrival, while the mother was telling me about her daughter's illneſs, I obſerved the colic pains returned periodically, and ſeemed more like labour than the alleged complaint.

"She was then in bed, lying on her ſide, and her back towards the place where I was ſeated. On pretence of examining her ſtomach, I felt the lower part of the abdomen of a round globular

figure; and below the integuments, the uterus firm and tenſe, above the pubis, and betwixt that and the umbilicus: then I examined the vagina in time of that pain, and found the membranes forced down with the waters to the lower part thereof. When the pain abated, I felt the ſhoulder and arm of the fœtus within the relaxed membranes.

"Without ſaying any thing to the patient, I deſired to ſpeak with her mother and aunt in another room; and as this was an ante-nuptial affair, I told them the caſe; and deſired they might hold their tongues at preſent; for, if they acted otherwiſe, it might endanger the patient's life.

"Having deſired the patient to move her breech near the ſide of the bed, and ſlipped a bed ſheet, folded, below her, to ſponge up the moiſture, I gradually introduced the fingers of my right hand, contracted in a conical form, through the os externum, which was largely dilated by the membranes, during the interval of the pains. As one of theſe returned, I puſhed my hand into the vagina, and againſt the tenſe membranes, to break through them, ſo as to get within them to the body of the fœtus; but they being rigid, my hand ſlipped through the os uteri, and up into the womb, on the outſide of the membranes; then graſping them with my fingers, they burſt aſunder.

"As I had now introduced my hand within the membranes, I found the child floating in a large quantity of waters, which were kept up ſo as that not one drop could paſs, my arm plugging up the paſſage. I now found the head was detained by the navel-ſtring's ſurrounding the neck: this I diſengaged, and by a little puſh at the head, it ſwam up to the fundus uteri; then the nates coming down, I took hold of the legs, and brought them without the external parts: the child being ſmall, was eaſily delivered with the placenta.

"The child was alive, but died ſoon after. According to the patient's reckoning, ſhe was only entered into the ſeventh month of her pregnancy. Had I known this circumſtance at firſt, there would have been no occaſion to do any thing but perforate the membranes; for, as the paſſages were ſo largely open, and the child ſo ſmall, it would have been ſoon delivered in any poſition, with the labour pains; but as my hand was up in the uterus, it was then better to deliver as above."

Dr. Smellie ſays, this caſe was of great uſe to him afterwards; as he diſcovered by it, that the waters are prevented from coming down by the arm's plugging up the paſſage, if the membranes are not broken before the hand is introduced into the uterus; and this is a favourable circumſtance, when the child is large, and in a wrong poſition; for, when the membranes are broken, and the waters pour all off at once, before the hand can be got up, the uterus contracts ſo cloſe to the body of the child, that it is then more difficult to effect the delivery.

CASE II.—" A woman bespoke me to attend her, because her two former labours had been difficult, and both children had been lost.

" When I was called to her in labour, I found, during a pain, the os uteri largely open, and within the membranes the feet and nates of the fœtus; but before mentioning this, I enquired of the patient how her former labours were, and if in the natural way: the nurse answered, that they were; but on my saying, that the child came now in a wrong position, she acknowledged that both the former children came by the feet, and were delivered by different midwives, who were obliged to use a great deal of force, and each a long time before the heads could be delivered; but this circumstance had been kept a secret from the patient, to prevent any gentleman's being called.

" Examining after this information, and not finding any signs of a distorted pelvis, I imagined that the loss of the children might have proceeded from the heads of both obstructing the circulation in the navel-strings. Being in hope of succeeding better, I had the patient laid in bed, in an advantageous position, for the more speedy assistance, if the delivery should prove tedious; viz. supine, across the bed, and her legs supported by two of my pupils, who were allowed to be present, as a recompence for my trouble.

" The pains being strong, the waters had by this time forced down the membranes through the os externum, into which I easily introduced my hand, broke the membranes, and brought down the legs and body of the child; but as it stuck at the shoulders, I was obliged to bring down one of the arms, and after that another: I then felt that the difficulty of delivering the head was from the child's being large, and the patient and pelvis small.

" As I still felt a pulsation in the funis, I had, all along, and at the different efforts, used great caution to prevent over-straining the neck; but after many unsuccessful attempts to deliver in time of the pains, and the pulsation of the funis growing languid, as well as the woman's efforts, I was obliged to increase the force, as in cases of the last collection. I had the long curved forceps ready; but as I had delivered children with more force, and alive, I tried one effort more, by which the head was delivered. At that instant I was sorry to find the neck overstrained, and reflected, that this might have been prevented with the above instrument. The child, when delivered, seemed alive, and by using the common method to assist respiration, it gasped three or four times, and expired.

" Besides my being sorry that I did not try the forceps, before this last effort to deliver, I also reflected, that as there was a large quantity of waters surrounding the child, that the membranes were not broken, the parts largely open, the woman and pains strong, and that her children had been lost from the difficulty of delivering the head; these circumstances considered, it would have been

better practice, to have introduced my hand into the uterus, broke the membranes, and brought down the head to present; by which means it would have been squeezed down in a lengthened form through the small pelvis, and the child would have had a better chance of coming with more life into the world; but I own I did not think of this method till it was too late, and the body was brought down."

CASE III.—"Being called to a woman in labour, the midwife told me, that the labour had gone on in the common way, by the membranes being forced down, and opening the internal parts; but in place of the head, she found something like a hand or foot within them; on which account, she had recourse to my assistance, as soon as she perceived the wrong position of the child.

"Some time before I arrived, the membranes broke. On examining, I found the hand and fore-arm forced down without the os externum; and being informed that a large quantity of waters had been discharged from the uterus, I expected it would require much force to turn, and deliver, by bringing down the legs of the child.

"Having prepared every thing necessary to prevent hurry and confusion in time of the operation, and having also put the patient in a supine position, I took hold of the child's hand, which was the right, with my left hand, and introduced my right, in a flattish form, up betwixt the sacrum and the child's arm, where I found the shoulder closely engaged in the os uteri, which prevented all the waters from coming off; for, pushing up the arm and shoulder, they, with my hand, slipped with ease into the uterus.

"Finding that my arm filled up the vagina, so as to prevent the remaining waters from coming down, I with my hand examined the position of the fœtus, and found the head low down at the left side of the uterus, the nates to the right, at the fundus, with the legs folded up at that side. As there was a large quantity of waters still remaining, I raised the head to the fundis uteri, and brought down the legs with much greater ease than I at first expected; and the child not being large, was safely delivered."

CASE IV.—"Being called to a patient in labour of her first child, I examined in time of a pain, and found the os uteri was open about the breadth of a shilling, the membranes and waters were forced down, and gradually dilating the parts; but not being certain as to the presentation of the child, I desired a midwife whom I left in waiting, to send for me, when she found the labour further advanced.

"The woman being impatient, I was again called in about two hours; when I found no great alteration, only the os utei was felt a little softer and not so thick: as the pain abated, I likewise felt some part of the child; but feared it was not the vertex, as it had

not the large round hardnefs of that part, being rather fofter and more unequal.

"I mentioned nothing of this; but encouraged the patient, and allowed the labour to go on flowly, by which means the os uteri was gradually dilated; and at laft I plainly perceived that the face prefented.

"In order to prevent reflections, if the child fhould be loft in the delivery, I privately, without the patient's knowledge, told her friends the wrong prefentation; and on pretence that a fupine pofition would affift the delivery, I had her conveniently laid in that attitude, fo that I could affift with advantage in cafe the waters fhould be difcharged of a fudden.

"By this time the membranes had fully ftretched the os uteri, and begun to dilate the vagina; but being afraid they would break before they could fufficiently open the os externum, I gradually affifted every pain with two fingers in the vagina, to make room to introduce my hand, either to be ready, in cafe the membranes fhould break, to bring the head of the fœtus into the natural pofition, if the pelvis was narrow and the head large; or if not, to turn and deliver by the legs.

"When the parts were fufficiently dilated fo as to admit my hand, I eafily introduced it into the vagina, on which the membranes broke, and fome of the waters came off; then I pufhed up the head and infinuated my hand into the uterus, and my arm filling up the vagina and os externum, prevented any more from coming down.

"The fore parts of the child were to the right fide of the uterus; the pelvis was not narrow, nor was the child uncommonly large; and there being ftill a large quantity of water, I with great eafe and fafety brought the legs, and delivered the child."

Case V.—"One of the poor women where the pupils attended, fell in labour in the eighth month of pregnancy, about ten days after fhe had been feverely beaten: fhe had been in a lingering way for two days.

"As the midwives and gentlemen could not feel any part of the child prefent, they fufpected it would be a preternatural cafe, and fent for me. On examining, I found the os uteri largely open, and in time of a ftrong pain, the waters forcing down the membranes into the vagina; but when the pain abated, and the tenfe membranes relaxed, no part of the fœtus could be felt, I then obferved, as this was the woman's firft child, it was ftill proper to have patience, and allow the membranes to ftretch the vagina and external parts.

"Having ordered the patient to be laid in a convenient pofture, as in the former cafe, to be ready to deliver in cafe the fœtus fhould be in a wrong pofition, I waited until I found the

membranes were forced through the os externum, and had sufficiently dilated the same; but finding them still rigid, the woman weak from want of nourishment, and considering the length of the labour before we were called, I thought it was proper to begin, and, if possible, to prevent the loss of all the waters, in case the child was in a wrong position.

"As a pain abated, and the membranes were relaxed, I introduced my hand into the vagina; but feeling no part of the child, I concluded it lay across the uterus, with the back, side, or belly downwards.

"In this opinion, I forced my hand up into the uterus, on the outside of the membranes; which giving way, I insinuated my hand within them, and was surprised to find the whole body of the fœtus close up at the fundus uteri, and a large quantity of waters below, which were kept from coming off, by my arm plugging up the vagina: I also felt the head lower than any other part of the child: the cause of this position I did not know till after delivery.

"Having searched for the feet, and brought them with the legs without the os externum, I wrapped a cloth round them, and turned the fore-parts of the child backwards; but after several attempts I could not deliver the body. Examining the legs, and finding by the cuticula's being livid, and stripping off, that the child was certainly dead, and that the obstruction proceeded from the inflation of the abdomen, I resolved to open it with the sciffars, or the more certain method of the crotchet: but on making another trial, and with a good deal of force, the expanded belly came out all of a sudden, and, as the child was small, the shoulders and head were easily delivered.

"If the membranes had broken, and the waters come off in time of the labour, the head of the child would have presented to the birth. I have had a few cases of the same kind, where I could not feel any part of the child before the membranes were broken, and I could not account for this circumstance before I attended this woman; but I have since observed where no part could be felt when the waters were come down with the membranes, and the passage was largely opened, and the head presented after the waters were in part, or wholly discharged, that the child had been dead some time; and from the inflation of the abdomen, was specifically lighter than the waters, especially when there is a large quantity kept at the upper part of the uterus; but if there is a small quantity, the head will be felt before they are discharged.

"Cases also happen when no part can be felt before, and sometimes even after the membranes are broken in pendulous bellies, and also when the child lies across in the uterus."

Children delivered in the last four Months of Pregnancy, from violent Floodings.

Case I.—"I was sent for to a woman, who was attacked with an hæmorrhage from the uterus in the sixth month of pregnancy, occasioned by a fall from a horse; she complained much of pain in her left side, on which she fell, and said her belly seemed as overstrained, from the violence of the shock.

"She was brought home, blooded, and put to bed before I arrived at the place. The parts affected were also fomented and embrocated with a mixture of oil, spirits, and vinegar.

"The discharge at first was but small: she had no pains that indicated a miscarriage coming on, and her pulse was regular. I ordered barley-water acidulated with sp. vitrioli for her drink; directing her to be kept quiet, that she might get as much natural rest and sleep as possible.

"Next morning, finding that she complained more of the bruised parts; that the discharge still continued; and that the fear of this, and the fright from the fall, had prevented sleep; she was again blooded, upon which the above complaints were abated; and she being costive, was also much relieved by an emollient clyster.

"In the evening several small clots of blood were discharged, with slight strainings, and the hæmorrhage returned with greater violence than before. The blooding at the arm was repeated, and a paregoric draught given her, in which were twenty-five drops of laudanum, by which means the discharge again abated, and she slept pretty well all night.

"The complaints from the fall were now much better; but she being much dejected on account of the danger of miscarrying, I endeavoured to soothe and assuage her fears. I desired her to keep chiefly in bed; to continue drinking barley-water acidulated, to live mostly on weak broths and panada, and to abstain from fermented liquids, and every thing that was not of easy digestion.

"Nevertheless, for several days a bloody serum was continually draining; and every now and then some coagula came off with strainings; which brought on a fresh hæmorrhage, that soon abated.

"About eight days after she had received the fall, I was sent for in great haste at six in the morning, and was informed that the discharge of a large coagulum of blood was followed by a violent flooding, which still continued.

"I found her pulse low, her countenance pale, and she was so faint that she could scarcely speak.

"I had all along told her friends, the great danger to which

ſhe would be expoſed if the flooding ſhould return and increaſe before labour came on.

"Although ſhe had already loſt a large quantity of blood, yet it was by intervals, and there had been time between the diſcharge to recruit her ſtrength by the above-mentioned light nouriſhing diet. I now found the diſcharge rather increaſed; that there was little probability of reſtraining it ſo as that ſhe might proceed in her pregnancy; and I was afraid if I delayed attempting the delivery longer, ſhe might ſoon be in imminent danger of her life.

"At this period of my practice, I did not know, that applying ſtyptics in the vagina, and filling it up with doſſils of lint, would ſometimes reſtrain the flooding, and aſſiſt to bring on labour: neither did I know, that the breaking of the membranes, to allow the diſcharge of the waters, was of uſe to reſtrain the floodings, by allowing the uterus to contract cloſe to the contained embryo or fœtus.

"Having ſignified to the friends the danger that the patient was in, I deſired the huſband to call another gentleman of the profeſſion, who came accordingly.

"After being informed of every circumſtance about the patient, he was of the ſame opinion, and thought it abſolutely neceſſary to deliver her as ſoon as poſſible.

"Having encouraged the woman, I had her laid in a firm poſition, expecting, as it was her firſt child, it would require a good deal of force, and coſt the patient much pain, before the parts would be ſufficiently dilated, ſo as to admit my hand into the uterus.

"Having laid ſeveral doubles of a ſheet below the patient, and being ſeated properly, I began gradually to ſtretch the os externum.

"Having made room for my fingers, which were contracted together in a conical form, I continued moving them ſlowly in a ſemi-circular manner, and by intervals, till at laſt I introduced my hand through it into the vagina. During theſe and the following efforts, the patient was told, and imagined it was her labour coming on; by which deception ſhe bore the pain with great fortitude.

"I now found the os uteri only ſo much open as to receive my fore-finger, by turning which from ſide to ſide, it yielded ſo as to receive the middle, and by repeated efforts was at laſt ſo much dilated as to enable me to introduce all the fingers of that hand; yet after ſeveral trials, I could not make a larger opening, and my fingers being much cramped, I was obliged to withdraw that hand, which was the right, and try to dilate with the fingers of the other; which were alſo ineffectual, ſo that I thought proper to deſiſt.

"The patient having undergone much fatigue, we ordered her

ten drops of laudanum in a cup of burnt red-wine, and applied cloths dipped in vinegar to the external parts, and over the abdomen. Happily for the woman, we found that the flooding was again diminifhed, and agreed that fupporting her as before with nourifhing fluids to fupply the lofs of blood, was the only method by which we could hope to carry her on, and keep her alive until the parts grew more foft and yielding, or the labour become more vigorous.

" About nine or ten at night the flooding returned, but was foon reftrained by giving a draught with fifteen drops of laudanum She continued in this way for three days, the flooding returning four or five times, and abating on repeating the draught.

" At the end of this period, fhe was again attacked with another violent difcharge, which did not abate as formerly. Finding the os uteri fofter, and to appearance more yielding, I made a fecond trial, and at laft with fome difficulty dilated fo effectually as to introduce my hand into the uterus, then breaking the membranes, I found a larger quantity of waters than could have been expected, confidering the fmallnefs of the child.

" To prevent the weak patient's fainting, from the fudden emptying of the uterus, I defired one of the affiftants to prefs on her belly with both hands, and after I got hold of the feet of the child, I flowly brought down my arm which had kept up the waters, that they might be difcharged by degrees, and at the fame time defired the affiftant to prefs a little more. The child being fmall was eafily delivered; it came into the world alive, but died in a few hours after its birth.

" As the placenta did not follow by pulling gently at the funis, I again introduced my hand, and found it at the back part of the uterus, the inferior part of it adhering firmly, and feeling like a fchirrous fubftance: I therefore did not venture to feparate it for fear of tearing the inner fubftance of the uterus; but only brought down that part that was already feparated: for, fome time before this, I had a patient who I imagined was loft by ufing too great force to feparate the placenta in the feventh month.

" Although the violent difcharge was much abated after the delivery, yet the patient feemed to be in great danger from repeated faintings, pale countenance, and low pulfe: for thefe reafons I prefcribed five drops of laudanum in a little burnt claret, applied a cloth dipped in vinegar on the abdomen with a long towel pinned round her body. We were obliged to keep her lying on her back, with her head and fhoulders in a low pofition, for at leaft two hours before we durft venture to place her right in bed, giving her every now and then fome broth out of a teapot, and likewife fome more of the red-wine: we alfo repeated the fame dofes of laudanum a fecond and third time, in con-

ſequence of which ſhe at laſt fell into little doſing ſlumbers, and at laſt recovered from the moſt imminent danger.

"She continued in a weak condition for many days: that part of the placenta which was left behind, communicated a diſagreeable and mortified ſmell to the diſcharges, and did not ſeparate and come off before the fifth or ſixth day after delivery."

Dr. Smellie was the more particular in deſcribing every circumſtance of this caſe, in order to ſhew young practitioners the difficulty and uncertainty of managing flooding caſes, eſpecially in the laſt four months of pregnancy, for they frequently ſtagger the judgment even of the moſt experienced practitioners.

CASE II. —"I was called by a midwife to one of her women, who had been attacked with a flooding for ſeveral days, and was then only in the ſeventh month of uterine geſtation.

"The midwife told me that the patient had been blooded, and every thing done to reſtrain the diſcharge; but now it was increaſed to that degree that it had run through the bed; that ſhe had undergone frequent faintings, every one of which it was feared would be her laſt: the midwife alſo informed me, that ſhe had ſomething like labour pains every now and then.

"The woman's pulſe was low, her countenance pale, and indeed like one ready to expire. On examining, I found the os uteri open near the breadth of half-a-crown, and the breech and feet of the fœtus preſenting.

"I gave the patient five drops of laudanum in a little red-wine, and repeated the ſame every five minutes for three times; not daring to give more at a time, on account of her weak condition, as the flooding ſtill continued. When ſhe ſeemed to have a little ſtraining I tried to bring on a pain, by ſtretching the os uteri with one of my fingers; this forced the membranes and waters down ſo ſtrongly that I broke them; but finding, after waiting ſome time, that this had not the deſired effect to reſtrain the flooding ſo much as I expected, I repeated the laudanum.

"As the woman continued to have frequent faintings and cold ſweats, I told the friends that there was little hope of life, even if ſhe were delivered, and gave my opinion, that perhaps ſhe would expire in the attempt; but as they begged that I would try, and as it ſeemed the only method, and the laſt reſource to ſave her from death, I ſtretched the parts gradually and delivered the fœtus; but as it was her firſt child, it required a good deal of force to dilate the os uteri, and on introducing my hand through it, I felt it give way, and tear on the left ſide.

"The child was alive, and lived till next day: the placenta followed the delivery.

"The patient fell into a kind of doſing, and recovered contrary to expectation, conſidering the low condition ſhe was in at the delivery.

" The laceration of the os uteri gave me a deal of concern. I had been formerly employed in a caſe, where the woman was not ſo weak, and by uſing great force, in order to ſave both mother and child, the os uteri was torn ; the woman died ſoon after, from loſs of blood as I then imagined, proceeding from the torn veſſels of the uterus."

CASE III.—" A midwife ſent for me on Sunday, about one in the morning, to a woman who was exceſſively weak and low, from a violent flooding. She had formerly been delivered by a gentleman of ſeveral children.

" The midwife at firſt informed me that ſhe had been but lately called ; that the patient had loſt a great deal of blood, and was in the utmoſt danger from frequent faintings.

" The woman's pulſe was ſo low that I could with difficulty feel its motion ; a cold dampneſs overſpread the face and extremities, and ſhe could ſcarcely ſpeak. On examining, I found the mouth of the womb largely open, the placenta lying over it, and the vagina filled with coagulated blood.

" I enquired of the huſband, why he did not ſend ſooner for aſſiſtance ; but he made a frivolous excuſe, about the perſon's being engaged who was to have laid his wife ; being afraid, as I found afterwards, that if he had told me the truth, I would have refuſed my aſſiſtance until the other gentleman ſhould be called again : mean while, he begged for God's ſake I would do all in my power to ſave his wife. I told him the caſe was dangerous, and ſo much time already loſt, that a ſpeedy delivery was the only method left ; though I was much afraid that ſhe would expire in the operation.

" All preſent were convinced of the danger : I was moreover informed, that the patient had a ſmall degree of flooding for ſeveral days ; but that evening it had increaſed with greater violence, and was attended with ſome labour pains, which laſt had left her for more than two hours.

" There being no broth ready, I ordered an egg to be beat up with warm water, ſeaſoned with a little ſalt, to which was added ſome red-wine : a little of this was given immediately. In the mean time I prepared every thing for the delivery, and deſired the midwife to move the patient nearer the ſide of the bed, with her back towards it. During this alteration ſhe again fainted ; and indeed every one preſent imagined ſhe would not recover from the ſwoon.

" When recovered a little, ſhe in a low tone begged earneſtly to be delivered, her ſtrength being ſomewhat recruited. I introduced my hand into the vagina, and tried to reach the membranes in order to break them ; but the placenta was over the mouth of the womb. I being afraid of tearing the after-burthen, ſlipped my hand, flattened, through the os uteri, and betwixt that and the placenta, until I reached the membranes, which I broke

through, by grafping them with my fingers; then taking hold of the legs of the fœtus, which were at the fundus uteri, I brought them down flowly into the vagina.

" The midwife was feated on the oppofite fide of the bed, on purpofe to prefs with both her hands on the abdomen, to prevent as much as poffible, the patient's fainting away, from the too fudden evacuation of the uterus. As there was a large quantity of water ftill detained, I defired that the preffure might be increafed, when I withdrew my hand; and although the head was at firft downwards, it eafily turned up to the fundus, when I brought down the legs.

" Finding the patient bore the operation without fainting, I removed the wet cloths above, and applied dry ones to the external parts: I ordered fome more of the egg-caudle and wine to be given, and then with great eafe delivered the child, which was dead. The fecundines followed, being forced out by the weak effort of the woman, along with a large quantity of coagulated blood.

" When I introduced my right hand into the uterus, to deliver the child, I paffed the edge of the placenta, at the patient's left groin, and found it adhering to the back part and right fide of the under part of the uterus: this was an advantage, in confequence of which I got fooner to the membranes. That part of the placenta which was detached and over the os uteri, was of a dark livid colour; the other, that adhered to the uterus, was frefh, and well coloured.

" After delivery, the flooding abated, and to appearance the patient feemed a little recruited, and lay pretty quiet for fome time; but in about an hour after, fhe began to have a difficulty of refpiration, which gradually increafed, with rattling in the throat; at laft fhe fell into faintings and convulfions, which foon clofed the difmal fcene, by putting a period to her life.

" The midwife, who was an old practitioner, and in good repute, told me, that the gentleman who formerly attended the patient in all her labours, had been called fome days before, and ordered what he thought proper in fuch circumftances; but the complaint increafing, and he being otherwife engaged, the midwife was fent for at his defire, on Friday night, when fhe found the patient had a fmall degree of flooding, which increafed and diminifhed by intervals; but as fhe found nothing like labour beginning, fhe defired her patient might ftill continue to take what was prefcribed by her phyfician. She was again called next evening, when fhe found fomething like labour pains, the mouth of the womb a little open, and fome foft fubftance like the placenta prefenting. On this the doctor being again fent for, declared what prefented was only a large coagulum of blood; and went away, after ordering fome other medicines.

"As the flooding continued to gain ground, the husband went for the doctor about ten at night, but did not find him at home. The hæmorrhage increasing, and the woman appearing to be in imminent danger, he went again about twelve, and found the doctor in bed, who said he could not go with him, because he expected to be called every minute to another patient, to whom he had been previously engaged. In a word, he could not be prevailed upon by all the entreaties the gentleman could make; so that immediately on the husband's return, I had received a call.

"After this information, the midwife proceeded with bitter exclamations, inveighing against the doctor for abandoning the woman, and leaving her in extremity, as he had done frequently in other dangerous cases.

"I have mentioned these circumstances as a warning to other female practitioners, and recommend their being in friendship with gentlemen of the same profession, who may be ready to assist in such dangerous cases, when they are otherwise engaged, both from motives of humanity and a regard for their own character. I understood afterwards, that the above gentleman thought himself above being in friendly correspondence with midwives, from too much self-sufficiency. In a little time after this occasion, he was, for neglecting a patient in the same circumstances, exposed, sued, and cast in a considerable sum of money."

CASE IV.—"A midwife sent for me to a woman near Westminster-abbey. She told me her patient was attacked in the beginning of labour with a discharge of blood, which was not violent at first, but as she found it increase, she desired my assistance. Before my arrival, the membranes had given way, and one of the child's arms come down into the birth. I understood the flooding had diminished, and that now there was but very little blood on the cloths.

"On examining all the cloths, I found there had been a good deal of blood lost; nevertheless, although the woman's pulse was low, she did not seem so weak as I expected. Indeed, before I examined the case, I ordered her to take some wine with her caudle, to strengthen and recruit her spirits.

"On trial, I found the arm lying double in the vagina, and the shoulder pressed in at the upper part. Being afraid if I delayed the delivery it would be more difficult to turn the child, I caused the patient, as she already lay in a supine position, to be brought down to the foot of the bed, the weather being cold, and that part nearest the fire-place.

"I ordered two assistants to support her legs, and, as it was not her first child, I easily introduced my hand into the vagina. There being a small quantity of waters retained in the uterus, from the shoulder's plugging up the os uteri, I with great ease

pushed up the arm and shoulder into the uterus, raised them up to the fundus, brought down the legs, and delivered the child, which was but small, the placenta following without any assistance.

" While I was employed in dividing the funis of the child, which was alive, one of the assistants told me that the woman was fainting away. I immediately gave her the child, andpressed on the abdomen of the patient with both my hands, having forgotten that precaution in time of the delivery; but instead of recovering from the fainting, she was immediately thrown into convulsions, and died instantly. Besides the pressure on the abdomen, every method of stimulating was tried to prevent the fatal catastrophe, as volatile salts, spirits, and burnt feathers, held to her nose, to quicken respiration; also frictions of the temples, arms, and legs.

" I reflected afterwards, that the fainting did not proceed from any new evacuation of blood after the delivery, as there was very little on the cloths, but from neglect of the pressure. As the flooding had stopped after the membranes broke, it perhaps had been safer to delay the delivery till the patient recovered more strength, or at least until the pains returned, which were gone off on the discharge of the waters; for the shoulder of the fœtus would have kept up the remaining waters until those efforts returned."

Case V.—" A woman near Temple-bar, of a very weak habit of body, having been under great affliction for the loss of her husband, was suddenly taken with a violent hæmorrhage, upon which, a gentleman who had been bespoken to lay her, was sent for about four in the morning; but he being otherwise engaged, I was called about seven, and desired by an acquaintance that came for me, to make all possible haste to prevent the woman's being lost for want of proper assistance.

" In this emergency a midwife had been also called, who told me that the patient had some slight pains, and had not lost much blood; in which assertion she was contradicted by the attendants, as well as by the woman herself: they desired me to examine the cloths, where, indeed, I found a large quantity, and was informed that the midwife made slight of the affair, to prevent another being called.

" As I found the patient's pulse very low, and her countenance pale, I told the friends the danger, and desired them to send again to the other gentleman, as he might now be disengaged; but this was objected to, as it would take up too much time, especially as he lived at a considerable distance; they therefore begged I would not delay assisting the woman, who was in so deplorable a condition.

" On examining, as the patient lay on her side, I found the os

uteri fully dilated, the membranes, and part of the placenta, presenting. I introduced my hand in a conical form into the vagina, intending to break the membranes, that the waters, after being discharged, might allow the uterus to contract to the body of the child, and restrain the flooding; but the membranes were rigid, and in making an effort to lacerate them, my hand slipped easily through the os internum into the uterus, on the outside of the membranes. After having broken through them, I delivered the child and secundines, as in the former case, but in a slower manner. I ordered one of the assistants to press the abdomen with both hands in time of the operation.

"The child was alive, the hæmorrhage abated, and the patient, who bore the delivery with more courage than I expected, seemed at first to be in a good way; but having lost more blood than her weak condition could well bear, in a little time her pulse became low and creeping, and her extremities grew cold. I then ordered warm bottles of water, wrapped in flannel, to be applied to her feet, legs, hands, and arms, and supplied her frequently with chicken broth, which was then ready. I also prescribed a cordial mixture with confect cardiac. a spoonful of which was to be given from time to time.

"In consequence of these precautions, she enjoyed short, yet interrupted slumbers, and recovered, contrary to my expectation; but was several weeks so low, that she could not sit up. In about six weeks after, she was carried to the country, and recovered her strength by drinking asses milk."

CASE VI.—"I was called in the evening to a patient in labour, by whom my attendance had been bespoken. I found the os uteri rigid, and open about the breadth of half a crown. This trial being made in time of a pain, I waited till it went off, and the membranes being relaxed, I felt the head of the fœtus within them, resting above the ossa pubis; but between that and the membranes I felt something like the funis umbilicalis, lying backwards towards the sacrum, in two or three doubles. As she had not had a stool for two days, one was procured by administering an emollient clyster.

"Having waited till about ten at night, and finding the pains were but weak and seldom, I sent for a midwife, whom I kept on purpose to attend my patients in lingering cases, and desired her to put the woman to bed, in hope she would obtain some sleep; but enjoined her to send for me when the pains grew stronger, and before the membranes broke.

"About six in the morning, I was called in a great hurry, and not a little surprised when I came into the room to find the patient pale and fainting, the friends surrounding the bed all in tears, begging my assistance to save the woman's life.

"The midwife I left told me, the patient had slept a good deal

till about five, and had only waked now and then with the pains; that there had been ſome ſhews, or a very ſmall appearance of blood on the cloths; but that all of a ſudden ſhe was attacked with a flooding in time of making water, which had almoſt filled the pot; and that it ſtill continued to pour from her in a large quantity.

" On examining the cloth that had been applied to the parts, when the fainting began, I found very little blood; the hemorrhage having been reſtrained in time of the deliquium. The patient recovering, and taking a little wine and water, I felt the os uteri largely open, the membranes puſhed farther down, and part of the edge, or ſide of the placenta, at the left ſide of the os uteri. I alſo, with more certainty, diſtinguiſhed the funis on the inſide of the membranes, and the head in the ſame poſition reſting above the pubis.

" This caſe being uncommon, I was uncertain at firſt how to proceed; but at laſt, conſidering with myſelf, if I broke the membranes to evacuate the contained waters ſo as to allow the uterus to contract, and reſtrain the flooding, the fœtus would be loſt by the preſſure of the head againſt the funis in time of delivery, I reſolved, in order to prevent this misfortune, to turn the child, and bring it along in the preternatural way, which would give a better chance to reſtrain the one, and ſave the other, if the operation could be performed in a ſlow cautious manner.

" As there was no broth ready, I ordered the whites of two eggs to be beaten up with a pint of warm water ſeaſoned with ſalt; this to be given the patient from time to time, with a little wine, to repleniſh the emptied veſſels.

" Having aſſigned to the midwife, and the other aſſiſtants, their proper ſtations, and prepared every thing neceſſary, I examined in time of a pain, which forced out ſome coagula of blood from the vagina, with a freſh diſcharge. As the patient lay on her left ſide, I kneeled down on a cuſhion behind, introduced my right hand into the vagina, and as the placenta was at the left ſide, I turned my hand ſo as to ſlide it gently through the os uteri, and up betwixt the membranes and right ſide of the uterus.

" Having graſped and broken the membranes, I inſinuated my hand within them, raiſed the head to the fundus, and turning the fore parts of the child to the back part of the uterus, brought down the legs into the vagina, allowing the waters to come off by degrees. Meanwhile I deſired one of the aſſiſtants to preſs with the palms of her hands on the patient's belly, and increaſe the preſſure as the uterus emptied. The patient endured all this with great fortitude.

" Having cleared away the wet cloths, and applied dry ones to the parts, I obſerved that the flooding was diminiſhed, and reſted more than half an hour. In the mean time I directed her

to take ſeveral times ſome of the above caudle. Finding her ſtrength and ſpirits recruited, I delivered the child, which was ſmall, with great eaſe, and the ſecundines followed.

"The preſſure was continued on the abdomen of the patient, until a long towel was applied round her middle, and ſecured ſo as to do the office of a firm bandage.

"The child was very weak at firſt; but recovered. The mother continued in a low condition for many days, being ſupported with broths and cordials; but was able to get out of bed in three weeks."

CASE VII.—In this inſtance a woman in labour was attacked with a flooding, and the child delivered footling.

"The midwife, when called, was informed by the patient that her pains were but ſlight, and ſeldom; but ſhe was much alarmed at ſome blood that came away every time, as there had been no appearance of any ſuch complaint in her former labours.

"When the midwife examined, ſhe found the mouth of the womb a little open; but could not diſtinguiſh any part of the child: and the woman being of a weak and delicate conſtitution, ſhe told the friends the danger ſhe would ſoon be in, if the diſcharge increaſed. On this information a phyſician being ſent for, ordered an anodyne mixture; and as he was obliged to go out of town, deſired them to call me, if the flooding did not go off, or ſtrong labour come on.

"Soon after this, the patient was taken with violent and frequent retchings, which very much increaſed the flooding. On this I was immediately ſent for; but being called in great haſte from one labour to a ſecond, the meſſenger could not find me, and went for another. In the interim I came home; and being informed of the meſſage, reached the houſe before he could arrive.

"The labour pains by this time were gone off; the patient's lips and countenance were pale, the pulſe had ſunk, and ſhe was attacked with frequent ſingultus. On examination, I found the os uteri largely dilated, the membranes and waters preſenting, and ſomething like the fingers and funis umbilicalis of the fœtus within them.

"By this time the flooding was a little abated, on which it was propoſed to ſend and prevent the other gentleman's coming, as he lived at ſome diſtance; but I told them, by no means, as the woman was ſtill in the utmoſt danger, and it was very proper to have his advice and aſſiſtance, both on account of the patient, as well as to prevent reflections, and for the ſatisfaction of all concerned.

"By the time my brother accoucheur arrived, I had given her every now and then a little broth and wine to recruit her ſinking ſpirits; and when he examined, he told me that he found theſe parts mentioned above, and likewiſe the head of the child for-

wards and reſting above the oſſa pubis. This I had not perceived; for as ſhe lay on her left ſide, I had only examined with a finger of my right hand, which I could not turn above the pubes; but on trial with my left, I eaſily found the head reſting above theſe bones.

"After conſulting together, and conſidering every circumſtance of the caſe, he at firſt propoſed, as the flooding was diminiſhed, to give the patient a paregoric draught, and wait with patience for the return of the labour: but ſoon after this, and before the medicine arrived, ſhe was attacked with a violent fit of retching; which forced down a large coagulum of blood, attended with a return of the flooding, which ran over the bed.

"This ſudden change altered our former reſolution, and we now concluded that the only method to ſave the patient's life was a ſpeedy delivery. Indeed I was of that opinion at firſt, on account of her weakneſs, as well as in reſpect to the ſafety of the child, as the funis had fallen down before the head.

"The ſide of the bed being wet, and at a diſtance from the fire, I had the patient turned to her back, and moved down to the feet. While two aſſiſtants ſupported her legs, I kneeled down, and with greater eaſe than I expected introduced my hand into the uterus, and delivered the child and ſecundines much in the ſame manner as in the former caſe; having taken almoſt the ſame precautions to prevent the patient's fainting away, and ſinking under the operation.

"There was no appearance of life in the child: yet no part of it was livid, neither the lips, nor private parts; a circumſtance which plainly ſhewed, that it had not been long dead.

"As the flooding was now ſtopped, we ordered the patient to take about a teacupful of broth every quarter of an hour or oftener to ſupport her, and recruit the loſs of ſo much blood; but not too much at a time, leſt her weak ſtomach ſhould be overcharged, and bring on again the retchings to which ſhe was very ſubject (as the nurſe informed us), even in time of health. We likewiſe directed her, if ſhe ſhould not get refreſhing reſt, or if the flooding ſhould return, to ſwallow the paregoric draught already preſcribed; in which were twenty drops of tincture of opium.

"By theſe precautions and proper attendance, ſhe in eighteen or twenty days came to be in a good way of recovery, conſidering her weak and delicate conſtitution."

Case VIII.—"One of my patients ſent her coachman to me, deſiring that I would go to his wife. He informed me that ſhe had been in labour above twenty-four hours; that ſhe had formerly eaſy labours; but now ſhe was reduced ſo low by a ſudden loſs of blood, that he was afraid ſhe would ſink before I could reach the houſe.

"On my arrival, the midwife told me, that as ſoon as labour

began, the patient was taken with a ſmall degree of flooding, which had gradually increaſed as the mouth of the womb opened; but that ſhe had all along found an uncommon ſubſtance preſenting, and had ſome hours ago deſired the friends to ſend for a doctor; a propoſal to which the woman herſelf would by no perſuaſions conſent.

"She was to all appearance in a dying condition, nearly as deſcribed in Caſe III. under this head:

"On examining, I found the os uteri largely open, and the placenta over it; on which I ſignified to the huſband and friends the great danger, declaring I was apprehenſive ſhe would expire in time of delivery; and that it was a great pity ſhe would not allow aſſiſtance to be called for before it was too late.

"Her ſiſter begged that I would deliver the child, as it was now the only chance to ſave her life; and if ſhe ſhould die, no perſon could be blamed.

"I uſed all the precautions as in Caſe VII. but in paſſing up my hand by the placenta into the uterus, I could not break through the membranes.

"I was therefore obliged to withdraw it, and puſh my fingers through the placenta; then I delivered the child in the preternatural way, on which the flooding ſtopped; but ſhe was ſo weak that ſhe expired in a few minutes.

"Yet, contrary to my expectation, eſpecially as the placenta preſented, and was torn through the middle, the child was alive."

Case IX.—"A woman aged about thirty, who had been delivered of ſeveral children before, was taken with a violent diſcharge of blood from the uterus: ſhe was immediately blooded; opiates and reſtringent medicines were preſcribed.

"Theſe reſtrained the hemorrhage a little; but it returned with more violence, and to ſuch a degree, that when called again, I expected ſhe would expire every moment.

"The midwife informed me, that ſomething like labour was begun; on which I examined, and found the os uteri open about the circumference of a crown piece, and very thin.

"The relations of the patient all begged of me, for God's ſake, to deliver her as ſoon as poſſible, to give her a chance for life, and not to let her womb be the grave of the child.

"I complied with their requeſt, and delivered her much in the ſame manner as deſcribed in Caſes VI. and VII. of this collection (pp. 320 and 322): but unluckily, when ſtretching the os uteri, which felt thin and rigid like a piece of parchment, the woman ſhrunk from the ſide of the bed, which obliged me to dilate with more force than I intended, to get my hand into the uterus; at which inſtant I felt the mouth of the womb give way, and tear at the ſide, ſo as to allow my hand to paſs without further difficulty.

"The flooding diminiſhed after delivery, on giving her fifteen drops of tinct. opii; but returned in two hours, and ceaſed again on repeating the ſame medicine.

"She ſlept pretty well all night, was next morning much recruited by the refreſhing reſt and nouriſhing diet; but ſoon after, was attacked with a violent hemorrhage from the vagina, by which ſhe was in great danger of expiring immediately.

"This was checked by introducing into the vagina a ſponge dipped in a ſolution of alum.

"To me it ſeemed probable, that this flooding might proceed from ſome of the large veſſels being torn, that enter at the ſide of the uterus.

"She was long weak; but, by the aſſiſtance of the bark and a nouriſhing diet, recovered.

"The child was alive, and at the full time."

The following caſes were ſent to Dr. Smellie from gentlemen who formerly attended his lectures on midwifery.

Case X.—A woman complained of a violent cough, which had continued eight or ten days, and was the occaſion of bringing on a flooding, for which ſhe had been blooded a few days before. She was of a thin habit of body, and ſallow complexion, had a ſlow and weak pulſe, which was now and then raiſed by fits of coughing.

That night ſhe took ten grains of the pil. ſaponac. and next day ſhe was conſiderably better both as to the cough and flooding. In the afternoon ſhe was ordered to take two ſpoonfuls of a cordial and pectoral julap, frequently, the pills were alſo repeated, by which means ſhe reſted very well that night; but next day the cough and flooding returned, for which about ten ounces of blood were taken from her arm.

"When I firſt examined," ſays the writer of the caſe, "the os uteri was not in the leaſt dilated; but this day, ſhe having had ſome ſlight labour pains, it was open about the largeneſs of a ſixpence. As ſhe was coſtive, I ordered a clyſter, which had its proper effect; and after that the following mixture:"

(No. 13.) ℞. Pulv. boracis ʒij.
Tinct. caſtor.
Tinct. croci āā ʒj.
Sp. lavend.
Sal. vol. oleos. āā gt. xl.
Aq. cinnamomi ℥j.
Aq. menthæ ſativ. ℥vj.
Syr. croci ℥jß.
Capiat cochlear. ij. ſecunda quaq. hora.

"After this, her pains came on ſtronger and more frequent; but all of a ſudden ſhe was attacked with a violent fit of coughing, which again brought on the flooding, and forced down a large quantity of coagulated blood. In this emergency, I was ſent for

in a hurry, and found the os uteri largely dilated, the placenta presenting, and several lobes of the same separated from the membranous part, and lying amongst the coagula that had been discharged.

"At this time she had no pains, and the midwife told me, that the waters had been come off about an hour before I arrived; this was about one in the morning. Finding her faintish, with scarce any pulse, and her extremities almost cold, with a clammy sweat upon her head and hands, I told the friends the danger she was in, and the necessity of delivering the patient directly. Having put her in a supine position, and ordered every thing necessary to be in readiness, as the placenta lay in my way, I first brought that away, then turned and delivered the child by the feet with great ease, till I came to the head, which, as it was large, stuck in the passage, until I introduced one of my fingers into the mouth, and depressed the lower jaw, which assisted the head to come along with great ease.

"On examining the child's body, I perceived it had been dead many days, from the livid appearance of the skin, but more especially from the scarf-skin being stripped off in several places.

"As the secundines did not follow the delivery, I again introduced my hand, and brought them down, with the remaining part of the placenta; and ordered the patient some ol. amygd. d. and syr. ex althæa, for her cough; also some ther. venet. with pulv. Gascon. to warm her, and promote perspiration.

"When I saw her next morning she was a little feverish; the lochia were in a small quantity, but her cough was much abated, and she had had tolerably good rest. To assuage the fever, and assist the uterine discharges, I ordered her to take repeated doses of the saline draughts, sweetened with syrup of poppies, which relieved her much, and by proper nourishment she recovered better than I expected."

CASE XI.—Mr. Mudge, of Plymouth, was called to a woman in the forenoon, about half an hour after eleven o'clock; and was informed, that as she was spinning in the morning at six, she found something gush from her with so much force, as made her suspect it to be the waters; but on looking on the floor, she found it was blood. She had continued flooding in that violent manner till he was sent for; she was come nearly to her full time, but had not felt any pain through the whole.

"The patient," says Mr. Mudge, "was lying on the bed: her whole body was pale, and had a livid appearance, covered with a cold clammy sweat, and without almost any pulse. I was shewed a chamber-pot three parts full of pure blood; and it was now pouring down in so great a quantity, that I imagined the only chance to save her life was a speedy delivery.

"After acquainting the friends of the imminent danger, I ex-

amined, and found the parts greatly relaxed, and the head of the fœtus presenting to the birth, which I passed with my hand, to seek for the feet; but the first thing I met with was the placenta, quite detached, and lying loose in the uterus. This puzzled me at first, and made my coming at the membranes somewhat difficult and confused; however, I got to them, tore them open, and taking hold of the feet, brought them down to the passage, and soon finished the delivery. On introducing my hand to bring off the secundines, I found the uterus not contracted, but lying like a loose unelastic bag in the abdomen.

" The flooding stopped directly, and the woman seemed much revived. I gave her twenty drops of laudanum in a cupful of mulled port wine; but not having a sufficient quantity of blood left in her vessels to carry on the circulation, and vital secretions, she died in about half an hour after delivery."

Case XII.—Mr. Mudge attended another woman, nearly in the same circumstances as the former, with only this difference, that she had not lost quite so much blood.

" When she sent for me," says he, " I found her flooding very fast. She was come to her full time, but had no pains, nor any appearance of labour. I gave her an opiate, and desired her to keep quiet in bed. This was about eleven o'clock in the forenoon; and when I called again, about half an hour after one, the hemorrhage was not gone off, but rather increased.

" The former case was too fresh in my memory, to delay my assistance in this; I accordingly told the patient the great danger she was in, and that it was absolutely necessary to deliver her as soon as possible: with some little reluctance she consented.

" Having introduced my hand into the uterus, I was very cautious of keeping up the waters. On insinuating my hand through the membranes, I raised the head, turned the child, brought down the feet, and perfected the delivery in a very few minutes; the placenta was in great part detached. The mother did very well, and the child was a strong healthy boy."

Case XIII.—A woman, who had bespoken the same gentleman to attend her in labour, was seized with a violent flooding, when seven months gone; on which account, he took ten ounces of blood from her arm, ordered her an opiate, and desired that she should keep quiet in bed. The hemorrhage abated, but returned next day, when it was again stopped by repeating the opiate, and giving her a course of saline draughts.

" For twelve or fourteen days," says Mr. Mudge, " the patient continued to have frequent returns of the floodings, which were as often restrained by the above methods; at which period, being sent for again in a hurry, I found the discharge violent, her pulse exceedingly weak, her countenance pale, her eyes sunk in her head, and to all appearance she was in a dying condition. I immediately gave

her a large opiate in a cordial draught, that it might have the full effect by the time the delivery was finiſhed.

"As ſoon as every thing neceſſary was prepared, and the patient laid in a right poſition, I introduced my hand, and found the right arm of the child in the paſſage, which was eaſily and gradually puſhed up into the uterus. This I found ſtrongly contracted, the waters having, as they informed me, gone off three days before. With my hand I gradually dilated, until I reached the feet at the fundus, and bringing them down with ſome difficulty, I finiſhed the delivery in the uſual manner, after giving the proper turns, that the fore parts of the body ſhould be towards the ſacrum. I alſo had ſome difficulty in delivering the placenta.

"The woman recovered; but the child died in a quarter of an hour after it was born."

CASE XIV.—This is a fourth caſe of flooding, from Mr. Mudge, in which the placenta preſented.

"A woman," ſays he, "being ſeized with a flooding in the morning, ſent for me in the forenoon: ſhe was come to her full time, and a week before had ſome appearance of the ſame kind.

"She had no pains; her pulſe was high and quick. I immediately took blood from her arm, ordered an opiate, and ſome ſaline draughts. The diſcharge ſoon abated, and ſhe remained without any appearance, till ſeven in the evening, when I was called in a great hurry by a ſervant, who ſaid her miſtreſs was dying, and was met by another in the way, repeating the ſame exclamation.

"On my arrival, I indeed imagined the patient was juſt a-dying; her pulſe was ſo low, that it could ſcarcely be felt to move; her face and arms were covered with a cold ſweat; her eyes had loſt their luſtre, and the blood was pouring from the parts.

"As nothing but inſtant delivery could give her the leaſt chance, I informed the huſband of the circumſtance. He conſenting, I then ſeated myſelf, and having introduced my hand into the vagina, found the os uteri much to one ſide, and ſo little dilated, that I could ſcarce introduce my fore-finger; but by ſtretching the ſame gradually, and ſlipping in one finger after another, I at laſt dilated it ſo as to receive my whole hand. The firſt thing I met with was the placenta fixed to the mouth, and anterior part of the womb, but ſeparated on the back part: I broke through it, tore open the membranes, and taking hold of the feet of the child, brought them down to the paſſage, and with great eaſe finiſhed the delivery; but in the hurry to ſave the woman's life, one of the child's arms was broken, which I afterwards reduced; and it proved a ſtout hearty boy.

"The patient recovered, contrary to the expectation of all preſent; and both ſhe and the child, I am perſuaded, muſt have inevitably periſhed, if this method had not been taken, or even if it had been longer delayed.

"I again repeated the opiate in a cup of mulled wine; notwithſtanding which, in about five or ſix minutes after, a fainting fit had nearly carried her off. To prevent any further diſcharge, which, though trifling, ſhe now could not bear, I ordered cloths, dipped, and wet with vinegar, to be applied to her back, and over the belly. The woman was of a thin habit, and tender conſtitution."

CASE XV.—Another of Dr. Smellie's correſpondents attended a woman aged forty, who being ſeven months gone with the ſeventeenth child, was threatened with a flooding. For this ſhe was blooded, and confined to her bed for four weeks; after which the hemorrhage returned, and continued, though not violently, for two days: on the third, at three in the morning, the blood came away in a torrent, and overflowed the whole bed.

When he arrived, which was about five, the patient was faintiſh, with ſcarce any pulſe to be felt; on which he intimated the great danger, and that it was abſolutely neceſſary to deliver the child as ſoon as poſſible.

When every thing was prepared for that purpoſe, he examined, and found the os uteri not ſufficiently dilated; however, he got hold of a foot, and pulled it down, without ſearching for the other, and delivered the child with great eaſe, having neither been obliged to bring down the remaining leg nor arms.

The child was large and healthy, according to the woman's time of reckoning; the hemorrhage, though not violent, continued two days longer, and the mother recovered.

CASE XVI.—Another practitioner was called to a woman in the eighth month of her ſixth child, who had been ſubject to floodings for two months before. The nurſe ſhewed him the bed-pan, in which was about two pounds of coagulated blood, and on examining the patient, the vagina was full of the ſame; the os uteri was lax, and open about the breadth of half a crown; but he was at a loſs at firſt to know what preſented.

As the patient was exceſſively weak, faint and low, he was afraid ſhe would expire under his hands. He told her friends that the only way to ſave her life was a ſpeedy delivery; however, he tried to raiſe her ſpirits with gentle cordials; a clyſter was alſo adminiſtered, with a view to aſſiſt the pains, which were but trifling; and when it operated, the coagula were forced from the vagina.

As the flooding ſtill continued, he had the patient placed in a ſupine poſition, and having introduced his hand into the vagina, found the placenta preſenting; after which, with great eaſe, he dilated the os uteri, ſlipped up his hand on the outſide of the membranes, and with ſome difficulty tore them aſunder. Although he found the head of the child preſenting, he durſt not, as the woman was lying like a corpſe, wait for a natural delivery, but immediately turned the fœtus, brought down the feet, and with little difficulty

delivered the body and head, which were very ſlippery and flabby, the child appearing to have been dead ſeveral days.

He with ſome difficulty ſeparated the placenta from its adheſions, and was agreeably ſurpriſed that there was no ſenſible flooding: all preſent were delighted to find the patient ſo ſenſibly recovered, and cheerful after delivery.

He ordered a gentle opiate to allay the after pains, which had the deſired effect; the lochia were ſufficient, and, in ſhort, every thing was to his wiſh; but a fever intervened, with irregular horrors and rigors, attendant with ſingultus, delirium, and, in ſpite of all endeavours, ſhe died on the fourth day after delivery.

Women attacked with Convulſions; the Children delivered in the Preternatural Way.

Case I.—"A midwife ſent for me in the morning," ſays Dr. Smellie, "to a patient whom ſhe had attended all the foregoing night; and who, without any accident, or previous warning, was all of a ſudden thrown into convulſion fits. At firſt they only returned every two or three hours, but afterwards more frequently. The woman had all along been ſtupid and ſenſeleſs.

"The woman had told me, that the patient was in the beginning of the ninth month of pregnancy; that ſhe formerly delivered her, when ſhe had an eaſy time, and no ſuch complaint; that the mouth of the womb was a little open; but ſhe had not found any thing like labour pains.

"Soon after I came, ſhe fell into a fit, during which I examined, and found the os uteri a little open, and that the convulſion ſeemed to act with the ſame kind of effort as a labour pain. As her pulſe was full, I ordered ten ounces of blood to be taken from her arm, and a bliſter to be applied to her back. No medicine could be given internally, as ſhe could not ſwallow any kind of nouriſhment ſince the firſt attack.

"In about four hours I was again called, on account of the convulſions recurring more frequent and violent; and found the os uteri ſofter, and much more open. Although, as before obſerved, there was no appearance of labour, yet the violence of the agitations, and ſtrainings in time of the fits, might have proved ſufficient to deliver the child; but I was afraid it was dangerous to allow the convulſions to go on longer; and was perſuaded that a ſpeedy delivery was the only probable method to ſave the patient, as well as the fœtus.

"After informing the friends of the danger, and the neceſſity of relieving the woman by delivery, and having placed the aſſiſtants to keep her in a firm poſition, I with great eaſe introduced my hand through the os uteri, broke the membranes, turned the child, and delivered it by the feet.

"The child was alive, and the mother had not another fit after the delivery; but ſhe remained ſtupid and ſenſeleſs for three days,

then became gradually more and more ſenſible, and would not believe for ſome time that ſhe had been delivered."

Case II.—"The ſame, or the following year, I was called to a poor woman near the Seven Dials; and was told by the midwife, that the patient was come to her full time, that labour was juſt begun, and at every pain ſhe was thrown into a violent convulſion fit.

"The pains were not frequent, ſhe was ſenſible between the fits, the os uteri was a little open, and the head of the child preſented. As her pulſe was quick, I ordered twelve ounces of blood to be taken from her arm, and a large bliſter to be applied on her back, betwixt the ſhoulders; a clyſter was alſo adminiſtered, which gave her a plentiful paſſage.

"This was in the morning, and I deſired the midwife to ſend for me if the fits did not abate, or returned with greater violence. In about two hours after I left the houſe, they again ſent for me; but being then engaged with one of my own patients, I ſent one of my oldeſt pupils, and deſired him, if the convulſions did not abate, to deliver the woman immediately.

"At firſt he found the patient in a doſing or comatoſe way; but ſoon after ſhe was attacked with a violent convulſion fit: he told her friends that it was abſolutely neceſſary to deliver her immediately, and that I had recommended this method to ſave her life, which was in imminent danger: the midwife was of the ſame opinion; but the woman's huſband and ſiſter would not conſent, or allow him to do any thing until I could come to her aſſiſtance.

"On my arrival in the evening, I found the patient was in a comatoſe ſtate, and now quite inſenſible; the fits more frequent, with tremors and ſubſultus. On this I told the friends the uncertainty of ſaving her, and was ſorry to find that they had prevented the gentleman from aſſiſting before it was too late.

"They now begged that I would do all I could to ſave the woman, and allowed me to ſend for ſome more of my pupils: the gentleman who was with her in my abſence, told me, that the convulſions had dilated the os uteri a little every time; however, it being her firſt child, it required ſome force and time before I could ſtretch it ſo as to paſs my hand into the uterus: this being effected, and having broken through the membranes, I brought down the legs, and delivered the child; but have forgot whether it was alive or dead.

"This caſe was not ſo fortunate as the former, for although the placenta came eaſily along, and the uterine diſcharge was ſufficient and moderate; yet the convulſions were not reſtrained; but becoming more frequent and violent, carried her off in two hours after delivery."

Case III.—"I was ſent for by a midwife, who told me that her patient's labour had gone on exceedingly well until the waters

came off; but ſoon after that happened, ſhe was attacked with ſtrong convulſions, which went off, and returned every time when a labour pain began to come on.

"The os uteri was ſufficiently dilated. The head of the fœtus preſented at the brim of the pelvis. The woman's pulſe was very quick, and her face uncommonly florid: on which account twelve ounces of blood were taken from her arm. But finding this avail nothing, and the convulſions growing more violent and frequent, and the head not advancing in the leaſt, I thought it moſt expedient, in this uncommon caſe, to deliver by turning the fœtus; which I eaſily performed, as the waters were not all diſcharged from the uterus.

"The child was alive, and the woman had not another fit after delivery."

CASE IV.—"A young woman, come to her full time, was taken with violent convulſions when ſhe fell in labour; for which ſhe was immediately blooded, and a clyſter was given, which had the deſired effect. Nervous medicines and opiates were alſo adminiſtered; the laſt to allay the pains that ſeemed to bring on the fits; for every time a labour pain came on, ſhe was thrown into convulſions.

"The os uteri was open about the breadth of a crown piece, and a hard unequal ſubſtance preſenting, at firſt made it uncertain what part of the child preſented.

"She was ordered to drink plentifully of weak green tea, and barley water with ſome nitre, ſweetened with ſyrup of althea. In about three hours after this preſcription the os uteri was much more dilated, and on examining, I found that the forehead and eyes of the child preſented; the violence of the fits had abated after the blooding and the opiate; but were now grown ſtronger, and more frequent.

"In theſe dangerous circumſtances, dangerous both from the convulſions and bad preſentation of the child's head, I thought it was wrong to delay the delivery any longer. All preſent being made ſenſible of her ſituation, I had the patient kept firm in bed in a ſupine poſition, and gradually dilated the parts, which required time, and a good deal of force; but as the waters were all gone, I could not alter the poſition of the head; on which, and not without a good deal of force alſo, I brought down the feet of the child, and delivered, though not without greater fatigue than I expected.

"The child was alive, and, as in the former caſe, the woman had not any more fits after the delivery. She ſoon fell into a ſound ſleep, and recovered.

"When I firſt introduced my hand into the uterus, and found it ſtrongly contracted on the body of the child, I knew it would require great force to turn it: ſuppoſing that the wrong preſenta-

tion prevented the head from coming along, I made the trial to turn down the vertex; but that failing, I delivered in the preternatural way."

Preternatural Deliveries, in which the Membranes were broken, the Waters evacuated, and the Uterus was closely contracted to the Body of the Fœtus.

Case I.—"Being called," says Dr. Smellie, "to a woman in St. Alban's-ſtreet, I was told by the midwife, that a great quantity of waters had come off ſuddenly; and as the child did not preſent fair for the birth, ſhe had deſired my aſſiſtance.

"On examining, I found the hands and feet preſenting, and come down into the vagina, together with the funis umbilicalis, in the arteries of which there was a ſtrong pulſation. This laſt circumſtance I did not mention, becauſe this being the woman's firſt child, I did not know whether it could be ſaved in the delivery. I had learned by experience, that if the child is mentioned to be alive, and afterwards periſhes in the birth, the mother grieves, and imagines it is loſt by the unſkilfulneſs of the practitioner.

"As the patient was then in bed, and lying on her left ſide, I tried to deliver her in that poſition; but being prevented by her flying from me, I was obliged to turn her on her back, and acroſs the bed, with her breech to the ſide, and her legs ſupported by two aſſiſtants.

"Having confined her to this advantageous poſition, I gradually introduced my hand into the vagina, and in a flattened form ſlipped it up backwards, between the ſacrum, and thoſe parts of the fœtus that preſented, into the uterus: there I found the breech lying to the left, and the head at the right ſide; but not ſo low as the breech.

"As the legs were lying double in the vagina, by hooking two of my fingers on them, I brought them and the thighs down, and the child being ſmall, the body and head were eaſily delivered, by which the child was ſaved, and the mother relieved from danger. The placenta ſeparated, and was ſoon after forced down into the vagina by the after pains."

Case II.—"I was called to a caſe, in which the child preſented nearly in the ſame manner as the former, only the funis was not fallen down into the vagina; but after the body was delivered, the head of the child ſtuck at the brim of the pelvis, on which I made ſeveral trials to bring it down into the vagina; but finding the child was alive by the pulſation of the arteries in the funis, I was afraid of overſtraining the neck, if I repeated theſe trials and increaſed the force.

"The patient being in a ſupine poſition, I introduced a blade of the long forceps, that were curved to one ſide, up along each

fide of the pelvis, while an affiftant held up the body of the child to give more room for their application; and having fixed them on the head, and joined the blades of the inftrument together, I introduced two fingers of my left hand, and fixed them on each fide of the child's nofe, while my right pulled the head with the inftrument, and delivered it fafely.

"These two fuccefsful cafes gave me great hope that the above method would be of great fervice to fave the lives of many children, who are generally loft by over-ftraining the neck in delivering the head; but a third, in which I failed, fhewed, that we ought never to truft too much, or be over fanguine, with refpect to any particular method of practice; but vary the fame as we find it neceffary.

"However, although I have not had an opportunity of making any more trials of that kind; yet as I fucceeded twice, the practice is advifable; efpecially when we are certain, that the child is alive from the pulfation of the funis, or motion of the body, or would prevent overftraining the neck, or avoid ufing the crotchet."

Case III.—"I was called to a woman in labour; the waters had come off long before, and the midwife had tried to deliver the child; but failing in the attempt, had again folded up the legs and arms into the vagina along with the funis, with a defign to keep them warm till I arrived.

"As the patient was in bed, and lying on her left fide, I fat down behind her, and found in time of a pain the funis pufhed down, without the os externum, and there was not any fenfible motion in the veffels.

"This not being the woman's firft child, and the midwife having alfo fufficiently dilated the paffages, I with great eafe introduced my left hand along the back part of the vagina into the uterus, and found the head of the fœtus above the pubis, a little to the right fide: the breech was to the left fide, and higher than the head.

"I brought the legs down from the vagina, and wrapping them in a cloth, tried to pull down the thighs and body; but the head being fo low prevented their defcent: finding the fœtus large, I turned the woman into a fupine pofition as in the former cafe.

"I then took hold of the legs with my right hand, and introduced my left up the right fide of the pelvis to the head of the child, and while I pufhed it up to the fundus uteri, pulled down the legs further: by which method the breech was brought lower, and the head prevented from returning to obftruct the delivery of the body. When the thighs were brought without the os externum, I turned the fore parts of the child backwards; but afterwards it required a good deal of force, when the body was brought out, to deliver the head; and indeed if the child had been alive, it would have run a great rifk of being loft, from the overftraining of the neck."

Case IV.—"I was called to a woman who had been long in labour, and was told by the midwife who attended her, that after the membranes broke, she felt something like the head of the child; but when forced lower down she found it some other part.

"On examining the part that presented, it felt very much like the shoulder blade, but on the midwife's informing me that some of the child's purgings had come down on the cloths, and examining a second time, I found it was one of the hip bones.

"Being informed this was not the woman's first child, and finding her much exhausted with the length of the labour; that the parts had been largely dilated by the midwife before I arrived; and learning, on enquiry, that her former labours had been quick and easy, I thought it was pity to keep the patient longer in that distressed condition.

"Having ordered every thing necessary for the delivery to be in readiness when wanted, I had the patient firmly secured in a supine position, and on introducing my hand found the left hip presenting, the shoulder and head near the fundus uteri, to the right side, and the legs and arms backwards.

"This examination being made, in a slow and gentle manner, I first tried to bring down both legs; but finding them entangled with the funis, and the child alive, I could only bring down the left foot, which was the lowest; this being very slippery, and the uterus strongly contracted, my hand was so cramped that I was obliged to grasp the foot between two of my fingers to bring it without the os externum.

"I afterwards brought down that leg and thigh, and tried to bring the other also; but was prevented by a strong pain that forced down the left hip into the pelvis; upon which I introduced two fingers of my right hand, and hooked them in the back part of the child's right groin. Another pain coming on, by pulling at the left leg with my left hand, and at the above hold with my right, I delivered the child safely, as described in the breech cases.

"The child lay some time before it began to breathe, but at last recovered, to the great joy of the mother, who had lost all her three former children in the small pox."

Case V.—"The head, in this case, was to the right side of the uterus: the breech on the left, near the fundus, with the arms and legs backwards, as in the former case; but as the uterus was not so strongly contracted, some of the waters still remained. I grasped the body with my left hand, and raising the head and shoulder to the fundus uteri, by which the breech was brought to the lower part, the legs with great ease were grasped and brought through the os externum.

"In the mean time, the patient begged hard that I would do all in my power to save her child.

"The midwife informing me, that the woman had loſt one formerly which came in the wrong way, and I finding that the child was alive by the motion of its legs; and that although it was not uncommonly large, the pelvis was narrow; reſolved to proceed with great caution, and do all I could to ſave it.

"The patient was in bed lying on her left ſide: but on this information I had her moved into the ſupine poſition. Having brought down the body and one arm of the child which lay before the face, I introduced two fingers of my left hand into the mouth, and the fingers of my other over the ſhoulders; then trying to deliver, I could not move the head down after ſeveral gentle efforts in this manner. I let go my hold of the under jaw, and tried Daventer's method, by preſſing down the ſhoulders to bring out the occiput from below the os pubis; but this failing alſo, and finding there was ſtill a pulſation in the funis, I reſolved to try the forceps.

"I now deſired the midwife to hold up the body of the child ſo as to give me more room for introducing that inſtrument: but it being too ſhort, and the head above the brim of the pelvis, I could not fix them properly ſo as to render them of any uſe to aſſiſt the delivery.

"This method failing, and the pulſation of the funis beginning to grow languid, I again took hold of the child as at firſt: but finding the under jaw like to be over-ſtrained, I fixed a finger on each ſide of the noſe, and ſtanding up in time of a pretty ſtrong pain, I exerted a good deal of force: as the forehead of the child was backwards above the projection of the upper part of the ſacrum, I had already turned it to the right ſide, to give more room for the head to come down.

"Failing in this laſt attempt, I reſted a little till another pain ſhould return; but they being weak and ſeldom, and finding the pulſation at a ſtand, I again exerted greater force, by which I at laſt got the head delivered.

"Every method was tried to recover the child, but all to no purpoſe: a miſcarriage which was very grievous to the diſconſolate mother."

Case VI.—A gentleman called on Dr. Smellie, when he was engaged with a patient, and deſired him to come as ſoon as poſſible to his wife's aſſiſtance, giving him to underſtand that as ſhe was ſtepping into bed the waters had come off without any previous warning.

"I deſired him," ſays the doctor, "to ſend for the midwife who attended in her former labours; telling him, that I expected this labour would ſoon be over; and that I ſhould come time enough to aſſiſt his wife if there ſhould be occaſion.

"The midwife accordingly was ſent for, and arrived juſt in time to ſhift the patient, and put her to bed by the time I reached

the houſe: ſhe told me that on examining ſhe found a foot lying in the vagina; but I perceived it was an arm lying double, and I brought the hand through the os externum, to convince the midwife that it was not the part ſhe imagined.

"Although there had been no labour pains that the patient thought were worth noticing, yet the parts had been ſo dilated before the membranes broke, that I eaſily introduced my hand into the uterus, and found the child's head above the oſſa pubis, the fore part backwards, and a little to the left ſide.

"After diſentangling the funis umbilicalis, I brought down both legs; but finding I could not bring the feet further than the lower part of the vagina, I ſlipped a noose over them, as deſcribed in my treatiſe of midwifery; then taking hold of the fillet with my right hand, I introduced the other to the head, and puſhed it up, while I pulled down the legs with the nooſe: by theſe means the head was raiſed to the fundus, the arm that was down returned into the uterus, and the child was ſafely delivered.

"I delivered this gentlewoman once before, when the caſe was much the ſame, and of ſeveral children afterwards: her belly was ſomewhat pendulous; and it was remarkable, that if the membranes broke while ſhe lay in bed, the head of the fœtus preſented; but when in a ſitting or ſtanding poſition it ſlipped over the oſſa pubis, and the arm came down into the vagina. One lucky circumſtance attended theſe, for after the membranes broke, the ſhoulder filled up the os uteri ſo exactly, that there remained a ſufficient quantity of waters; by which the delivery was eaſily performed."

Case VII.—"I was called by a midwife to a woman where the arm of the child was come down and lying double in the vagina. As the waters were not all come off, but kept up by the ſhoulder in the os uteri, I firſt tried to raiſe the arm, and bring down the head ſo as to preſent in the natural way.

"I made this trial on finding the pelvis narrow, the pains ſtrong, and the woman not weakened with the length of the labour; but failing in this attempt, I raiſed the head and ſhoulder to the fundus uteri, and after bringing down the legs and body, tried again and again to deliver the head in the ſafeſt manner.

"Finding there was ſtill a ſtrong pulſation of the arteries in the funis umbilicalis, and being afraid of loſing the child by overſtraining the neck; although I had failed with the ſhort ſtraight forceps, as in Caſe V. yet I reſolved to try a longer pair that were curved to one ſide, to ſuit the curvature of the os ſacrum.

"They were contrived ſome years ago by myſelf, as well as other practitioners, on purpoſe to take a better hold of the head when preſenting, and high up in the pelvis; but I did not recommend their uſe in ſuch caſes, for fear of doing more harm than good, by bruiſing the parts of the woman, when too great force was uſed.

"The patient being in a supine position in bed, and two assistants supporting her legs, I found the forehead of the child was backwards, but a little to the left side of the lowest vertebra of the loins, which jetted forwards with the upper part of the sacrum, and gave more room for applying the forceps: wrapping a cloth round the body of the fœtus, I raised it towards the abdomen of the patient, which an assistant supported in that position.

"Being properly seated, I introduced my right hand up the left side of the vagina, till my fingers reached the left side of the child's face. Then with my left hand I insinuated a blade of the forceps up to that part. As I withdrew my right hand to make more room, I slipped the blade further, that the end of it might reach as high as the upper part of the child's head: then I moved it towards the left groin of the patient, that the blade might be over the left ear, which was at that part: the part of the blade that was bent to one side, was to the pubis; and the convex part was backwards to suit the concavity of the sacrum.

"My left hand was next introduced up the right side, betwixt the sacrum and ischium, and along on the inside of my hand the other blade in the same cautious manner, over the right ear: having locked them together, I introduced a finger of my left hand into the child's mouth, to keep the face from turning upwards; then pulling the handles of the instrument with my right, and increasing the force, I brought down the forehead past the narrow part of the pelvis, and turning it backwards to the concavity of the sacrum, brought the head through the os externum, by pulling upwards over the pubis, to prevent a laceration of the perinæum.

"There was a small impression made by the forceps on the scalp, which dispersed soon after: the child was strong and healthy; and although I used a good deal of force, the mother recovered without any uncommon complaints.

"Since my success in this case, I had another of the same kind, in which the child was saved by the same method. Vide Case II. under this head.

"Another occurred in the course of the same year, in which that trial failed on account of the uncommon largeness of the head, and the smallness of the pelvis; there I was obliged to withdraw the forceps, and extract the head with the crotchet."

Case VIII.—"Early one morning I was called to a woman at some distance in the country. The membranes had broke the night before: the arm presented pretty much swelled, and part of it without the os externum. Finding it was the left, I informed those who were present of the circumstances, in order to anticipate all censure, in case the child should not be delivered alive.

"The woman was laid across the bed in a supine position, two

assistants supporting her legs, and another on the opposite side, to support her head and shoulders, and prevent any obstruction from her hands and arms in time of the operation.

"With much difficulty I introduced my left hand betwixt the swelled arm and the back part of the vagina to the armpit; but it still required a good deal of force to raise the shoulder and head to the left side of the uterus, so as to allow room for my hand to pass on the right side along the breast of the fœtus to the fundus, where I found the knees; then hooking my finger in the hams, I brought down the legs into the vagina.

"As the fore-arm was still in the vagina, I could not fix the noose over the ankles, but was obliged again to introduce my hand, and, by pushing up the shoulders and pulling down the thighs alternately, I at last with much fatigue raised the body higher. The arm being removed out of my way, I brought the legs without the os externum: the pelvis being large, the body and head were easily delivered. The swelling of the child's arm gradually subsided, by the application of fomentations and cataplasms; but for several days it could not move that limb.

"One of the assistants told me, that finding the midwife pulling with a good deal of force, without being able to deliver the child, they were alarmed, and would not allow her to repeat those efforts till I came; they supposed therefore this was the cause of the arm's being swelled so much when the child was delivered."

Case IX.—"I was called to a woman at the distance of eight miles from the place where I then lived; she was excessively weak, could scarcely speak, and seemed to be in a dying condition.

"The midwife told me apart, that the patient had been in labour two days; that when the waters came off, the child descended to the passage; that as she could not after many trials deliver the body, they had sent for a gentleman famous in that part of the country for the practice of midwifery; that after many efforts, and waiting several hours, he told the friends it was absolutely necessary to take off the arm to make more room for the delivery of the child; that she had greatly assisted in helping him to twist it off from the shoulder, and made a great merit of helping the gentleman.

"She informed me also, that the patient had lost a great quantity of blood all the time of the operation; that all possible means had been used to separate the mother and child, but as her time was come, all was done that could be done by any mortal.

"On examining the arm, which the midwife brought out from under the bed, and observing it was not much swelled, I desired she would never boast of assisting in such an operation, especially as it had done no service in forwarding the delivery.

"The gentleman, who lived about four miles from the place,

had left the woman before I was called, and desired to be sent for when the pains returned, that he might then deliver her; promising in the mean time to send her a cordial julap.

"The friends, after this information, begged of me to deliver the woman if possible, and not let her go to the grave with the child in her womb. I told them that in all appearance she would very soon expire, and as the child was certainly dead, it was a pity to torture her any more; but as they were so importunate, and as there might be a chance of recovery, contrary to all expectation; and considering that even though she should expire in time of delivery, it might be serviceable to the public to expose an ignorant pretender, who had acquired a great reputation, even in spite of several such blunders, I resolved to comply with their request.

"Having ordered the woman to be put in the same position as described in the foregoing case, I expected it would require a great deal of force to turn the child; but was happy to find, on introducing my hand into the uterus, that the resistance was inconsiderable. I raised the shoulder to the fundus, brought down the legs, delivered the child, and the placenta; which last being already detached, followed the body with a large coagulum of blood adhering to it: this lax state of the uterus seemed to proceed from the great weakness of the patient.

"Although before delivery the woman seemed to be insensible and comatose; yet after being roused by the unexpected news of the child's being born, her drooping spirits revived, and she was able to express her thanks for my relieving her. All present were agreeably surprised to observe how easily the operation was performed, and sufficiently convinced of the ignorance of the other practitioner.

"I immediately ordered a little caudle to be given frequently; but although the flooding was now abated, she was so much weakened and exhausted with the length of the labour and great loss of blood, that she died the same night, in about two hours after I left the place.

"Some years before this incident, when I first settled in practice, a woman who had formerly been delivered of several children, was taken in labour; the midwife being intoxicated with liquor, I was sent for, and found the arm of the child come down into the vagina: the patient had been many hours in labour, and a flooding had begun, but was abated after the waters were discharged.

"I proposed to deliver by turning, and bringing the child by the feet; but that being a new method, and not known in the place, the midwife and assistants opposed it, and sent for an older practitioner, who undeservedly had also acquired some reputation in that branch; but instead of turning, he fatigued himself and the woman, by pushing up the arm to bring the head to present,

and when that method failed, he tried to deliver by pulling at the arm.

"Another gentleman was called who lived at a much greater distance than the former; but the flooding had increased so much by the former violence, that the patient expired before his arrival. As he knew more of the practice, he regretted much that the method I had proposed was rejected."

CASE X.—"Being called to this patient, and examining, I found no part of the foetus; but after placing her in a supine position, and introducing my hand into the vagina, I felt through the integument the haunch-bone and the ribs: insinuating my hand further into the uterus, I rested a little, and slowly examined the position, so as to be able to take the safest and easiest method to come at the legs, and turn the body of the child.

"Finding the arms and legs lying double, and forwards, and the ossa pubis of the mother preventing my hand from taking hold of the feet, I turned her from that position to her left side, and on introducing my hand reached the feet, which were easily brought down, and the child was delivered.

"The woman had been two days in labour before I was called. She recovered, but the child was dead: as I forgot to examine the funis when the body was brought down, I could not determine whether it was dead before, or lost in delivering the head, which required great force in the extraction."

CASE XI.—"I was called to a woman who had been long in labour, and on examining, found that either the shoulder or haunch presented. As she lay on her left side, I tried to introduce my hand into the vagina, in time of a labour pain; but on her flying from me, and not keeping in that position, I was obliged to turn her on her back, pretending that a supine position would assist the pains and the delivery.

"The friends present informing me of her unmanageable disposition, I had her firmly held by three strong women. Then I introduced my hand, and felt the left haunch presenting, with the fore parts of the foetus to the right anterior part of the uterus.

"Finding, as soon as I insinuated my hand into the womb, that the patient lay quiet, and did not make such violent efforts to move from me, and that in this position the pubis prevented my arm and hand from turning upwards and forwards, so as to take hold of the feet, I desired the assistants to turn her again to her left side.

"During this movement, I durst not venture to withdraw my hand, lest she should renew her violent efforts against me, and repeat the cries of murder, with which she had alarmed the neighbourhood.

"Her breech being a little over the side of the bed, a pillow betwixt her knees, which were raised up to her belly, and kept firm in this advantageous position, I stood behind her, and began the operation; the pubis did not now prevent my hands going up

to the fore part of the uterus; but the womb being ſtrongly contracted, I could only bring down one of the legs into the vagina. By fixing a cloth round the ankle, I moved the child with its head up to the fundus; and being but ſmall, it was eaſily and ſafely delivered."

CASE XII.—I attended a patient to whom I had been beſpoken, in the next year; the membranes were broken, and a large quantity of waters diſcharged before my arrival. The arm lay double in the vagina, and the os uteri was ſufficiently dilated.

"Having placed her in a ſide poſition acroſs the bed, I by degrees opened the os externum, which, as it was her firſt child, required ſome time, by dilating it a little every pain. At firſt imagining the fore parts of the child were to the back part of the uterus, I introduced my left hand along the back part of the vagina, and in puſhing up the arm and ſhoulder into the uterus to ſearch for the feet, I found my miſtake as to the poſition, and that they were at the fundus and anterior part.

"Having withdrawn my left hand, I introduced the right, and raiſing again the parts that preſented, I puſhed up my hand at the fore part of the uterus, where I found the legs, arms, and funis, entangled with one another, that I could not diſengage them with my fingers ſo as to take hold of the feet. This difficulty, joined with the contraction of the uterus, which I did not expect would happen ſo ſoon, when the membranes were ſo lately ruptured, ſo cramped my hand that I was obliged to withdraw it once more.

"By theſe repeated efforts to force up the body, the placenta had been ſqueezed and looſened from its adheſion in the uterus, and a flooding was brought on. Obſerving this ſymptom, and conſidering that no time ſhould be loſt, I made a ſecond trial in the ſame manner, as ſoon as my hand recovered its former ſtrength; but finding the ſame difficulty, I deſiſted from attempting any more to deliver in that poſition.

"Having turned her on the bed, to her knees and elbows, with her breech high and ſhoulders low, and ſhe being ſupported by aſſiſtants in this poſition, I again introduced my hand, and found the contraction and preſſure ſo diminiſhed, that I at laſt, though with a good deal of difficulty, got one of the feet betwixt my fingers, and brought it down to the vagina. By puſhing up the body and pulling down that limb alternately, the child was ſafely delivered; the placenta followed, and the flooding ceaſed."

CASE XIII.—"A midwife ſent for me to a woman in labour: ſhe told me that the membranes broke ſoon after her arrival, and ſuſpecting that neither the head nor breech preſented, ſhe had deſired the huſband to ſend for further aſſiſtance.

"As the patient was lying on her ſide, I examined, and was of the midwife's opinion; but uncertain what part of the child's

body was over the os uteri. She evaded my efforts in that position, therefore was turned to her back. Her breech was brought down to the foot of the bed, while two women supported her legs, and kept her firm, to prevent her flying from me in time of operating.

"On introducing my hand, I found the middle of the back presented; and that the shoulders were to the right side of the uterus. These I first tried to raise to the fundus; but as I endeavoured to come at the breech to pull it down from the other side, the shoulders returned.

"Finding, after repeated trials, that this method did not succeed, I slipped up my hand along the back part to the fundus, where I found the feet, and as I pulled them down, the back turned upwards; after which the child was soon and safely delivered."

CASE XIV.—"I was called early one morning to a woman who had strong labour. The membranes had been broken the night before; although the midwife found the funis come down, and the child presenting wrong, yet she concealed these particulars, pretending that every thing was right; that it must take a long time to deliver the child, and she would not allow any assistance to be called for, until the friends insisted upon having further advice.

"When a pain came on, I examined, and found the funis come down without the os externum, pretty much swelled, without any pulsation; then following it up into the vagina, I felt its adhesion at the abdomen, and told the friends, that the child presented in a wrong position, and was not alive. Hearing this declaration, they abused the midwife, and were about to expel her the house, if I had not interceded in her behalf, that she might assist the patient after delivery.

"As the patient lay on her left side, and the parts had been largely dilated, either by the midwife, or membranes before they broke, I with great ease introduced my hand, and felt the fore part of the thighs at the left side of the uterus; and tracing up higher, I got hold of the legs, which I could not then bring down, because of the great contraction of the uterus.

"My hand being cramped, I brought it lower, and after resting a little, tried to push up the breast and bring down the thighs; but this did not alter the position of the child sufficiently; and the patient not being kept properly in the side position, I was obliged to turn her to her back; then introducing my hand along the back part of the uterus to the fundus, I took hold of the legs, and pulling them downwards, the fore part of the thighs and belly turned upwards, by which means the body was brought down; but the child being large, the head was delivered with some difficulty."

CASE XV.—"Soon after the membranes were broken, I was

called to this case, and found the breast of the child forced down into the upper part of the pelvis: expecting it would require strength to raise and pass it, so as to come at the legs, I had the woman laid in the supine position.

"Wrapping a cloth round the right hand and fore arm of the child, that was protruded without the external parts, I took hold of it with my left hand, and introduced my right up the back part of the vagina; then unwrapping the cloth and letting go my hold, I pushed up both the breast and the other arm into the uterus, where I found the head and neck above the pubis, the thighs and legs lying double at the left side; which last were easily brought down into the vagina.

"After resting a little, I endeavoured to move round the body of the fœtus, by alternately pushing up the breast, and pulling down the legs; but finding this only fatigued the woman, as well as myself, to no purpose, I introduced the noose, and fixed it slowly over both ankles, not without some difficulty, as the feet were still pretty high in the vagina.

"Having at last got it firmly fixed, I twisted it round my right hand, and introduced my left, with which the breast was raised towards the fundus, on the right side, while the legs were pulled down by the noose from the left, without the os externum; then taking hold of the ankles with my right hand, to prevent their being overstrained, I raised the body of the fœtus higher with my left, and by continuing to push up and pull down alternately, the head and shoulders were raised to the fundus uteri, the arms returned into the womb, the breech was brought down into the vagina; then both mother and child were safely delivered."

Case XVI.—"In this case, the patient had been delivered by a midwife in the evening; and when I was called next morning, I found the right arm and shoulder of a second child, forced or pulled down without the os externum. The arm was not tumefied; but, as no pulsation could be felt at the wrist, I imagined the child was not alive.

"The neck, shoulder, and some of the ribs, as well as the arm, being all without the external parts, I was afraid that it would be impossible to force up these parts of the child into the uterus, so as to turn the fœtus, and bring down the legs: this method, however, I resolved to try first; but if that did not succeed, then to deliver in the manner recommended by Celsus in such cases, viz. to divide the neck, and bring the divided parts separately.

"Having ordered the patient to be properly held in a supine position, I tried to force up the shoulder, and was happy to find, that the child being small, all the protruded parts returned easier than could be expected into the uterus: then I brought down the legs, and delivered the child, which being alive, I was glad that I had not been obliged to fly to the last resource."

CASE XVII.—In the Medical and Phyfical Journal, Mr. Rowlands has publifhed the following curious account of the evolution of the fœtus, effected by the action of the uterus, where the arm and funis prefented.

"On the 28th of July, 1794," fays he, "I was called to E. T. aged 26, a well-proportioned woman, and rather under the middle fize. She was in labour of her firft child, and the waters had been difcharged about half an hour. One hand of the fœtus and the funis were protruded beyond the os externum, and the fhoulder was firmly locked in the os internum: the pains, at this time, were ftrong and inceffant; and I found it would be impoffible, without great violence, to turn the child. I returned the funis feveral times into the uterus; but with every pain it was forced into the vagina, and I was obliged to fuffer it to remain there. The pains continued unufually ftrong and frequent all night, and my attention was wholly taken up in guarding the funis from compreffion; but notwithftanding all my care, the circulation was frequently checked, though never entirely ftopped. I determined to leave Nature undifturbed, to effect the evolution of the child; for the poffibility of which there was undoubted authority *. Between four and five in the morning of the 29th, after twelve hours' very hard labour, I was fenfible, during the prefence of a pain, that the arm was beginning to recede; and, by the power of the next pain, the child was turned, and expelled footling."

The Children lying with the fuperior parts to the Os Uteri; the Feet and Breech to the Fundus; the Waters evacuated, and the Uterus contracted in form of a longifh Sheath.

CASE I.—"I was called to a woman in labour. The waters were difcharged the day before my arrival. On examining, and finding the head of the child did not prefent, I had the patient laid in a fupine pofition acrofs her bed; introducing my right hand into the vagina, I felt the fhoulder, and in raifing it, obferved that the fore parts of the fœtus were to the right fide of the uterus, and the head turned up above the pubis.

"On this information, I was obliged to withdraw my right hand, and introduce my left: while I tried to infinuate it betwixt the breaft of the child and the right fide of the uterus, I found this laft fo ftrongly contracted, that I was obliged to bring my hand lower, and pufh up the fhoulder and head to the left fide, to give more room for my hand and arm; thefe parts not moving round, I again forced my hand up along the breaft, and by degrees

* Vide Denman's Introduction to the Practice of Midwifery, p. 291, vol. ii.

reached the thighs and legs, which were folded double on the belly of the fœtus.

"As my hand began to be cramped, I rested a little, and the strength of my arm being somewhat recovered, I pushed up my hand further and further, to make more room for taking hold of the ankles: this I at last accomplished, and brought the feet down to the lower part of the uterus; but the great force which I exerted loosened the placenta, and brought on a flooding. Having withdrawn my left hand, I introduced the right, with which, by pushing up the shoulder and pulling down the legs alternately, I at last moved the body round, and the child was delivered, but not without changing hands three or four times, which were much squeezed and cramped by the strong contraction of the uterus: I was also, during the operation, obliged to alter my own position, from sitting to kneeling and standing alternately, as I found it necessary.

"The placenta followed the delivery, and the flooding ceased; the child was alive, contrary to my expectation, considering the great force and squeezing on the breast and abdomen, before I could bring down the legs. The patient being a strong, healthy woman, was not sunk by the flooding, which was of service in relaxing the uterus, and, by emptying the vessels, helped to prevent an inflammation."

CASE II.—"I was called to a person whom I had delivered twice before. To outward appearance she seemed very well formed for bearing children; but her being sickly, and tender in her infancy, was the occasion of a narrow and distorted pelvis.

"The distortion here differed from what I had observed, for the most part, in other cases of that kind. The bad formation is generally from the projection of the lowest vertebra of the loins and upper part of the sacrum, and may be distinguished by examining with a finger. In this patient, the distortion arose from the three lowest vertebræ of the loins bending forward, and could not be felt till after delivery, except in this last case, where I was obliged to bring down the legs of the child, and deliver in the preternatural way.

"In her first labour, when about five-and-thirty, she was attended by a midwife, and it proving laborious, a gentleman was called, who was obliged to open the head and extract with the crotchet. In her next pregnancy I was bespoken; and as the head of the child presented, I managed the labour from the beginning in a slow and cautious manner; but although the child was small, I with the greatest difficulty saved it, by the assistance of the forceps. When I attended in her third labour, with the same caution and patience as in the former, I could not save the child, which was larger; but found myself obliged to use the same me-

thod as the other gentleman had taken in delivering the firſt, to ſave the patient's life.

"When beſpoken to attend a third time, I was under no ſmall anxiety on account of the difficulty that attended her labours; but more ſo, when called, and examining, I found that the head of the child did not preſent. The membranes had not broken, but, in time of a labour pain, were puſhed down to the lower part of the vagina, and the mouth of the womb was largely dilated.

"After conſidering the caſe, I reſolved to try in time, before the membranes broke and the waters came off, either to bring the head to preſent, if large, or, if the child was ſmall, to bring down the feet, and deliver in the preternatural way; but while the bed was preparing, a ſtrong pain came on, which broke the membranes, and a very large quantity of waters was diſcharged on a ſudden, the patient being in a ſtanding poſture.

"The nurſe having put her to bed, her breech was brought down to the feet of it, and ſhe was laid on her left ſide; this poſition being moſt advantageous, on account of the projection of the diſtorted bones, which would have prevented my hand's going up, if ſhe had been in the ſupine poſition.

"Having ſeated myſelf a little behind the patient, I introduced my right hand into the vagina. The ſhoulder preſenting, and the head to the right ſide of the uterus, I endeavoured to puſh up the firſt, and bring down the laſt, to preſent in the natural way; but finding the ſtrong contraction of the uterus prevented my raiſing the ſhoulder ſufficiently, and that the ſlipperineſs of the head evaded my fingers, ſo that I could not alter its poſition, I gave up all hope of ſucceeding in that manner; for, when the membranes broke, the diſtorted bones prevented the ſhoulder's coming down to fill up the paſſage, and keep up ſome of the waters.

"Finding the contraction of the uterus ſo ſtrong, and the ſtrainings of the patient ſo great, that I could not reach the feet, I cauſed her to be turned to her knees and elbows, to prevent further ſtrainings: while ſhe was kept firm in this poſition by the aſſiſtants, I introduced my hand again, and finding the reſiſtance leſs, I puſhed it up gradually along the fore part of the uterus, where I found one of the legs, which I brought down; then puſhing up the ſhoulder and pulling the limb, alternately, as in the former caſe, I extracted it without the os externum.

"By this time I was pretty much fatigued, and reſted a little. The woman complaining of the uneaſy poſition, I had her again turned to her ſide: having fixed a nooſe round the ankle, and twiſted the other end of it round my right hand, I introduced my left to the face, and fore part of the neck and breaſt of the child, which were at the under part, and right ſide of the uterus: by

pushing up these, and pulling at the same time the leg down with the noose, I brought the breech lower, and the head, with the breast, to the upper part of the womb.

"Having withdrawn my left hand, and considered that there was still a greater difficulty to overcome in order to save the child's life, by bringing the head through the passage of these distorted bones, I moved the patient into the supine position, as formerly described. This alteration afforded more liberty to operate with safety than could be procured in any other.

"Wrapping a cloth round the child's right leg, I began to pull, and, by the assistance of the mother's efforts, brought down the hip to the lower part of the pelvis; then introducing the fingers of my left hand over the other hip into the groin, and pulling with both hands, I brought down the body to the arm-pits.

"Finding, by the pulsation in the funis, that the child was alive, I slipped my right hand up along the breast, to feel the position of the head, which was still high, and above the distortion, with the chin to the right side; but not being able to bring the head or shoulders lower, I withdrew my hand. After having brought down both arms, I introduced my left hand, and the head being a little lower, I hooked two fingers in the mouth, laid the body of the child on that arm, and fixed the fingers of my right hand over the shoulders on each side of the neck.

"Having taken a firm hold with both hands, I tried, in a slow and cautious manner, to bring down and extract the head, by increasing the force gradually, moving the face of the child backwards and forwards, sometimes altering my fingers from the mouth to the sides of the nose, sometimes quitting again these holds, and trying Daventer's method, by pressing down the shoulders, to bring the occiput out from below the ossa pubis: this method not succeeding, I again introduced my fingers to the mouth; but after exerting greater force, and pulling the body of the fœtus upwards, downwards, and from side to side, I was obliged to rest, and began to despair of saving the child's life.

"The woman all this time behaved with great courage, and assisted with all her strength, by forcing down every time I desired. As there was still a weak pulsation in the funis, I resolved to make another effort with all my strength, by which the head was moved a little lower; then forcing up my fingers to the forehead, I got a firm hold on it, and finished the delivery.

"The force used in turning the child had loosened the placenta, and brought on a large discharge of blood, as in the former case; a circumstance which commonly happens in such deliveries. As the after-birth followed the delivery, I wrapped it in the receiver with the child, and laid all on an assistant's lap near the fire, without tying and separating the funis, because I still found a creeping motion in the arteries.

"After having moved the patient from her uneaſy poſition, and further up from the foot of the bed, I tried the common methods to aſſiſt the recovery of the child. Soon after, the infant ſhewed ſome weak ſigns of life, and in about ten or fifteen minutes began to cry, and breathe with more freedom.

"As I ſuſpected that the neck was overſtrained in time of delivery, the head was gently preſſed towards the ſhoulders: on the recovery of the child, I examined the mouth and all the limbs, to find if any thing was amiſs. The infant continuing to cry inceſſantly while the head was waſhing, I examined, and perceived a large tumor above the right ear; I likewiſe found a depreſſion of the temporal bone before the ear, and the frontal and parietal bones puſhed outwards: theſe formed the ſwelling, and were the parts that ſtopped at the diſtorted bones of the vertebræ. On preſſing the tumor with my fingers, the child was quiet, but on removing them from the part, the bones were again puſhed out, and the child fell a-crying. By repeating the experiment more than once, I was convinced that this was the occaſion of the complaint.

"Having applied a thick compreſs, moiſtened with vinegar and ſpirits, on the tumor, and ſecured it with a proper bandage, I deſired the nurſe, if that was not ſufficient, to continue to aſſiſt with her hand, as before; for I did not chooſe to bind the head too tight, as ſuch fits of crying never happened in my practice, neither before nor ſince. I was glad to find next day that the ſwelling had diſappeared.

"The child was ſmaller in this caſe than in the former, and the mother recovered better than in any of her preceding labours. The difficulty that attended the delivery of the head, made me reſolve to uſe the long forceps."

Case III.—"Being called to a watchman's wife, the midwife told me, that the waters had come off in a large quantity, on which the arm was forced down into the birth, and the hand appeared without the external parts: ſhe had tried different methods to make the child (as ſhe ignorantly imagined) withdraw up its hand into the womb, and change itſelf into the natural poſition; dipping its hand in a baſon of cold water, and alſo in vinegar and brandy; but finding theſe trials fail, ſhe had recourſe to the laſt remedy, before any aſſiſtance from a man practitioner was thought neceſſary: ſhe directed the woman's huſband to take hold of her legs over his ſhoulders, and lift up her body three times, with her back to his, and her head downwards; being of opinion, that although the former methods failed of ſucceſs, this would anſwer expectation.

"On examining this caſe, I found by the hand and fingers, that the left arm was come down, and that the fore parts of the fœtus were probably to the right ſide of the uterus. I promiſed

to support the woman in her lying-in; and on this consideration, the gentlemen who then attended me for their instruction in midwifery, were allowed to be present at the delivery.

"Finding I could not keep the patient in a firm position, when on her side, I had her turned to her back, with her breech to the bed's feet; two of the gentlemen sustained her legs; her head was supported by lying in the midwife's lap; the midwife was seated on the bolster at the head of the bed, to keep her firm in that position, and restrain her arms, so as to prevent her hands from pulling at the assistants or me, in time of the operation.

"As the arm of the child was but little swelled, I easily introduced my left hand below it into the vagina; then pushing up the shoulder, insinuated my hand betwixt the breast and the right side of the uterus; but finding, after several strong efforts, that I could neither raise the shoulder higher, nor push my hand sufficiently up to come at the feet, I altered her position in the following manner.

"Observing that the midwife kept the woman's head and shoulders too high, I made her sit further up on the bed, that they might lie lower; but my hand and arm being by this time cramped and wearied, with working in too great a hurry, I was obliged to withdraw both, and rest a little. Considering that my other hand could not, in this position of the woman, reach the legs of the child, which were at the right side, I turned her to her knees and elbows, and had her supported in that posture by the assistants, on the bed.

"I then insinuated my right hand, and gradually stretched the contracted uterus, when I found the feet were turned up to the breech at the fundus. I now endeavoured, with all my strength, to push further up, so as to make more room to take hold of the legs; but the woman being strong, and struggling incessantly, we could not keep her in that position; so that all my efforts to bring them down proved abortive.

"This hand and arm last introduced being likewise cramped, I was obliged to withdraw them, and I began to despair of succeeding without the assistance of the crotchet; but I resolved to make one effort more. Finding we could not keep her steady in this last position, I had the bed raised very high at the feet with bolster and pillows; then she was laid again in the supine position as at first; her breech being raised much more, with her head and shoulders very low.

"My left hand being now pretty well recovered from the former fatigue, I introduced it as at first, and at last reached up to the fundus uteri; I now brought down one of the legs, and delivered the child with the assistance of the noose, as in the former case, but with much less difficulty, as this woman had a much larger and better formed pelvis.

"The child was alive; the mother recovered; and the placenta, being loosened in the time of operation, followed the delivery.

"She continued weak for three or four weeks, and complained of great pains in the abdomen and neighbouring parts; but having had large discharges at first, and being carefully attended, and kept in breathing sweats, the lochia and milk were so promoted as to prevent, in all appearance, the danger from a violent inflammation of the uterus.

"As this was one of the first difficult cases in which my pupils were allowed to attend, after I began to teach midwifery, I was really afraid, in time of operating, of being foiled, and suffering reproach, for pretending to teach others, while incapable of delivering so strong and so well formed a subject, without being obliged to bring the child by piece-meal with instruments; especially as the woman had told us, that in all her former labours she was commonly delivered before the midwife could come to her assistance.

"Although, while I lived in the country, I had been called to many such cases, yet I was never more fatigued. I was not able to raise my arms to my head for a day or two after this delivery; and one of the gentlemen who was present, being of a delicate constitution, was so much afraid, that he resolved never to venture on the practice of midwifery."

CASE IV.—"In this case," says Dr. Smellie, "the midwife told me that I had formerly been with the same woman, who recovered slowly after a tedious labour; that this would prove more dangerous, for that the arm of the child came down immediately after the membranes broke, on which there flowed from the womb a large quantity of waters.

"She also informed me, that as the hand was without the birth, she had folded it up in the vagina, to keep it warm till I should arrive. The patient was then lying on her left side, across the bed, which was uncommonly high, with a pillow betwixt her knees. I did not sit, nor kneel, but stood, and moved her breech near to the side of the bed; then I brought the hand again down out of the vagina, and told her it was the right, to prevent reflections, if that limb should prove lame after the delivery. I had found such complaints proceed from the midwife's pulling at the arm, and trying to bring along the body in that manner; but this notice being given, the accoucheur could not be blamed for overstraining the limb, and the misfortune would be imputed to pressure or cold, while the arm lay in that position.

"Finding by the arm of the child that its fore parts would probably be to the left side of the uterus; and also, that the abdomen of the patient was very pendulous, by its hanging more than usual over the pubis, I perceived that I could operate with

greater eaſe while ſhe lay on her ſide, than when lying in a ſupine poſition.

"I introduced my right hand into the vagina, and in puſhing up the ſhoulder, could diſtinguiſh, that although the pelvis was narrow, the child was not large; that the breaſt was forwards, but towards the left ſide, the head turned back on the ſhoulders to the oppoſite ſide. The contraction of the uterus being very great, it would have been impoſſible to bring down the head to preſent in the natural way; my endeavours for this purpoſe would have ſerved only to fatigue the patient and myſelf with vain labour.

"My hand being ſo far advanced, I puſhed it up further and further, along the left ſide of the uterus, to come at the legs of the child; but the patient's head and ſhoulders being too high (which poſition I forgot to alter), this circumſtance, joined with the force of the breaſt and abdominal muſcles, in her ſtrainings againſt me, prevented my hand's going up ſufficiently to reach theſe parts. Being afraid to bring down my right hand from the contracted womb, I ſlipped my left under her left hip, and, by the help of the aſſiſtants, turned her to her knees and elbows. (Vide Caſe V.)

"By this method, both the preſſure of thoſe parts and the weight of the child being much abated, the abdomen ſunk downwards, though at the ſame time her thighs and knees kept the belly above the pubis: at laſt, my hand penetrating to the fundus uteri, I took hold of the feet betwixt my fingers; then pulling them down, and puſhing up the breaſt, I, after a good deal of fatigue, brought the legs without the os externum. I now turned the patient to her back, and with ſafety delivered both her and the child, although the head ſtuck ſome time in the paſſage, and both force and caution were required to extract it."

Case V.—"I was called to a labourer's wife. Her midwife, on pretence of being ſent for to another, had left her ſoon after the membranes broke, aſſuring all preſent that the child preſented properly; and ſhe promiſed to return in time for the delivery: but on examining, I found both the arms down at the os externum, and the breaſt preſenting at the upper part of the vagina.

"After every thing neceſſary was prepared, I had the patient laid acroſs the bed in a ſupine poſition, with her breech high and her ſhoulders low. As the pelvis was large, and the arms of the child ſmall, I, in time of the labour pains, ſtretched the external parts, and introduced my hand into the vagina, up to the breaſt of the fœtus: in raiſing this, and examining the ſituation, I found the head was caſt back above the pubis.

"As the breaſt of the child was towards the ſacrum, I puſhed

up my hand betwixt the abdomen and the back part of the uterus, and then went higher and higher, in a flow manner; and by intervals ftretching the womb, which was ftrongly contracted. I found the thighs, knees, and legs, doubled up to the fundus; but not being able to come at the feet, which were caft forwards on the breech, I hooked my fore finger into the hams. This purchafe not being fufficient, I let go that hold; and at laft getting one of the feet betwixt my fingers, I brought the leg down to the vagina. This was not effected without a good deal of fatigue, in pulling down the foot and pufhing up the breaft; but not being able to bring down the other, I was obliged to reft fome minutes to recover the ftrength of my hand and arm.

"Having procured a foft garter from one of the affiftants, I formed it into a noofe, and tried to introduce and fix the ligature round the ankle of the child; but the foot was too high to admit its being applied properly. I was again obliged to introduce my hand into the uterus, and by pufhing up and pulling down, as before, brought the foot without the os externum; then, with the affiftance of the noofe, I altered the bad pofition, by raifing the head and breaft to the fundus uteri, bringing down the breech of the child to the lower part of the womb, as in Cafe II.

"The arms of the fœtus, by this movement, returned into the uterus, and afforded more room to bring down the other leg. Having wrapped a cloth round both, and finding, on extracting the thighs and hips, that the belly of the child was towards the pubis, I turned them to the facrum. As the body came eafily along, I did not bring down the arms, neither did I introduce my fingers to the face, to turn the forehead into the concavity of the facrum; but by preffing down the fhoulders of the fœtus, brought the occiput out from below the pubis.

"The child lay a long time feemingly dead, but at laft recovered. In the mean time, one of the affiftants imprudently telling the patient it was dead, fhe was immediately thrown into convulfions, and with difficulty recovered from inftant death, by applying ftimulating things to her nofe, fuch as burnt feathers, woollen rags, and fpirits; and when fhe retrieved the ufe of her fenfes, the cries of the child contributed greatly to her recovery."

Case VI.—"The waters, in this cafe, had been difcharged many hours; the head was at the upper part of the pelvis, and did not advance lower, although the pains were ftrong and frequent; but as the patient grew weaker, and was every now and then attacked with fainting fits, the midwife apprifed the friends of the danger, and defired them to fend for my affiftance.

"Having confidered every circumftance of the woman's condition, and ordered every thing that was neceffary to be in readinefs, I had the woman fecured in the fame pofition as defcribed

in the foregoing case; and in pushing up the face and head with my left hand to the left side of the uterus, found the fore parts of the child were to the back part of the womb; but in tracing further up to search for the feet, the strong contraction of the uterus pressed the head with such force against the muscles of my arm as to benumb my fingers, and gave me so much pain, that I was obliged to withdraw that hand.

"The patient's position being altered by her shrinking from me, I brought her breech again to the side of the bed, and desired the assistants to hold her in that situation. Encouraging her by promising to do all in my power to save both the child and herself, I introduced my right hand into the uterus, and delivered nearly with as great force and fatigue as in the above case. As the child, however, was large, I could not bring out the head in that manner, but was obliged to deliver it as in Case II.

Case VII.—"Being called one morning early, the midwife informed me, that she had delivered the patient several times; that her labours were soon over,* the children always following the rupture of the membranes; that although the head presented in this case also, she was afraid the delivery was obstructed by a large excrescence, which she imagined filled up the back part of the passage.

"The waters had come off the day before, and the woman had been in strong labour all night.

"When I first examined forwards, and towards the pubis, I was deceived as well as the midwife, by imagining that the child's head presented in the natural way; but in making another trial in time of the next pain, introducing the first finger of my right hand further up, and backwards towards the sacrum, I felt an uncommon soft substance, which I felt all round. At last, with some difficulty, I discovered that it was the face. The cheeks were so much swelled, that the eyes, nose, and mouth, seemed as if buried betwixt them, and the chin was backwards toward the left side of the pelvis.

"The woman's strength being much exhausted, and the child in danger of being lost in this bad position, I resolved to try either to alter the presentation, or deliver in the preternatural way. Having, as in some of the former cases, ordered the patient to be secured, and kept firm in a supine position, I gradually dilated the os externum, and raised the head above the brim of the pelvis; but the contraction of the uterus was so great, and that part of the child so slippery, that I could not raise up the face so as to bring the vertex to present in the natural way.

"The patient had made pretty strong efforts in [illegible]ning down against me during this trial. I now rested a little, to observe if the face of the child would come down lower in the pelvis, so as I might be able to assist the delivery with the forceps; but after

waiting ſome time, and the labour pains being weak, I at laſt, by uſing a good deal of force, puſhed up the head to the fundus uteri. The legs were brought down and the child delivered, as in the former caſe. The face was livid, and exceſſively ſwelled; but theſe appearances went all off in a few days."

CASE VIII.—"Being called to a woman, the midwife informed me, that the waters had been coming off for about twenty-four hours; and although ſhe had tried ſeveral times to aſſiſt the delivery, by pulling at the arms of the child, which were come down before the head, yet the preſenting parts ſtuck ſo faſt in the bones, meaning the pelvis, that ſhe could not bring them lower, and therefore had, as it was a deſperate caſe, ſent for my aſſiſtance.

"On examining, I found both arms come down much ſwelled, and backwards towards the ſacrum, with the head advanced a little, in a conical form, at the fore part of the pelvis.

"Conſidering theſe circumſtances, obſerving the patient greatly exhauſted with the length of the labour, the pains weak, and being certain that the child was ſtill alive, from the motion every now and then of its little hands and fingers, I reſolved to deliver, if poſſible, in the preternatural method.

"Having ordered the woman to be laid acroſs her bed, and ſecured in the ſupine poſition, I introduced my hand into the vagina, and puſhed up the child's head to the fundus uteri; then the arms returned into the womb. After much fatigue, I brought down the feet from the back part of the uterus, and delivered the infant, as in the former caſe. I did not know, at this time, the method of fixing a nooſe on the ankles, therefore the operation was the more tedious in puſhing up the body, and pulling down the legs ſufficiently without the os externum, ſo as to take a proper hold of them with my other hand. In this operation, I was obliged to reſt every now and then, and alſo to change my hands ſeveral times.

"The patient recovered; but, from the ignorance and imprudence of the midwife, in not ſending ſooner for aſſiſtance, the helpleſs child lay moaning and crying for many hours before it expired; for, by her pulling at the arms, they were ſo overſtrained and tumefied, as to bring on a mortification of theſe parts."

CASE IX.—"In this caſe," ſays Dr. Smellie, "I was certain, as well as in the former, that the child was alive, by feeling a ſtrong pulſation in the veſſels of the umbilical cord, which lay in ſeveral folds at the left ſide of the pelvis.

"The midwife informed me, that ſhe had felt the ſame motion immediately after the membranes broke; that the head of the child, although a large quantity of waters had been diſcharged, ſtill kept high; and that being afraid, if the labour was tedious, the child would be loſt, ſhe had deſired the friends to have re-

course to my assistance, more especially as the woman's former labours were commonly tedious, though safe.

"As the patient was then lying in bed, on her left side, and kept steady in that position, I introduced my right hand into the vagina, and examining the position of the child's head, found that the vertex presented, with the fontanel to the same side of the pelvis, where the funis was come down. After this enquiry, I pushed up the head, and tried to slip and pass the cord above it, to prevent the pressure and obstruction of the umbilical vessels; but finding, as I pushed up the different folds of the funis, they again returned alternately, and eluded all my endeavours to raise them, so as to remain above the forehead and face of the child, I had recourse to another method; I introduced my hand into the uterus, and delivered in the preternatural way, as described in Cases VI. and VII. under this head.

"When the head is not uncommonly large, nor the pelvis narrow, this method of delivery seems most advisable to save the life of the child; for, unless a very small part of the funis is come down, it seldom can be slipped up so high as to prevent the pressure of the head, and obstruction of the circulating fluids in the umbilical vessels."

Case X.—"This patient lived at the distance of several miles from my habitation. I had formerly delivered her twice of dead children; her pelvis was very narrow, and distorted at the upper part of the sacrum. She had both times been long in labour, and much exhausted before the friends desired my assistance. The heads of both foetuses were squeezed down of a great length, and so engaged in the pelvis, that she could not be delivered with the assistance of the fillet in time of the weak pains. As the waters had been long discharged, and the uterus was strongly contracted, it was impossible to push up the heads, so as to apply the fillets to advantage, or to turn the children, so as to deliver them in the preternatural method; but at last, after waiting a considerable time, I had been obliged to open the heads with the scissars, and extract with the assistance of the blunt hook.

"As it required a considerable force to deliver, after the heads were diminished by the large discharge of the contents, I question much, though I had then known the use of the forceps, if I could have saved them with that instrument; for I can very well remember, although now revising this with other cases long since, the fatigue that I endured at these two labours.

"As a ridiculous opinion prevails amongst the vulgar, that there are certain remedies to procure barrenness, and indeed such described by many of the oldest authors, the woman's husband, and some of their friends, called on me soon after the second delivery, and begged I would prescribe some medicines of that nature. I acknowledged my ignorance of the effects of any such

medicines, and desired them not to throw away money in going about to any false pretenders to such secrets; but to send for me at the beginning of labour, if his wife should again prove with child. My advice was taken, and I was called accordingly; but before I arrived, the membranes were broken, and most of the waters discharged.

"On examining, I found the head of the child resting above the pubis; not, as in the former cases, forced down into the pelvis. Although it required much force to deliver the body and head in the preternatural way, yet this being smaller than any of the former children, it was happily saved; but I neglected at that time to examine if all the limbs were sound. The father calling on me about three months after, told me, that although I had brought him a fine girl, yet he had been punished for his desire of having children, for she had not the power of her left arm. Some weeks after this visit, happening to be in that part of the country, I found the shoulder had been dislocated in time of delivery, and endeavoured in vain to reduce it.

"I was again called a fourth time to deliver the same patient. I turned and brought this child the preternatural way; but it being much larger than the last, was lost by my being obliged to tear down the head with the sharp crotchet.

"After I settled in London, a gentleman, who succeeded me in that branch of business, wrote me, that he had delivered the same patient, but that he could not possibly save the child; and that he had been so excessively fatigued in the operation, that he could not help wishing I had still remained in the country, in which case he should not have been called to so desperate a labour.

"Since I retired from business to the same country, Mr. Inglis, who succeeded the above gentleman, informs me, that he delivered the aforesaid woman in her last child, in the same manner I had chosen in the delivery of the two first children."

Case XI.—"This woman had been delivered of her first child by another practitioner, who was obliged to open the head of the fœtus, and extract it with the assistance of the crotchet.

"When she was in labour of her second child, and only gone seven months, I was called, and as the arm presented, delivered and saved the fœtus, by bringing down the legs, and extracting the body and head in the preternatural method.

"In her next pregnancy she went her full time of reckoning. Being called to her some hours after labour had come on, I found the os uteri largely open, the membranes broken, and the head of the child presenting. As she was then in bed, and lying on her left side, I had her turned to the right, that the uterus might be more in the middle, and give the fœtus a straighter position, to be

forced along with the labour pains; but the head did not advance. Confidering that the firft was loft by waiting for the natural delivery, that the fecond was faved by the preternatural method, and as this, by the touch of the head, felt fmall, I thought it fafer to turn, apprehenfive that the patient being weak, and of a confumptive conftitution, fhe would not have ftrength to force along the head through fuch a diftorted pelvis.

"Finding that this pofition was uneafy to the woman, I had her again turned to her left fide; but introducing my right hand into the uterus, and finding the legs of the fœtus to the right fide, without being able to reach them in that pofition, I was obliged, by the aid of the affiftants, to place her on her knees and elbows, according to Daventer's method. The narrow pelvis cramped the mufcles of my arm fo much, that with difficulty I got my hand fo high as to bring down the legs; then I turned the patient to the fupine pofition.

"The woman having been much fatigued, I gave her a cup of warm wine, with ten drops of tinct. opii; but a flooding coming on, I was obliged to deliver the child immediately: being larger than I expected, it was loft in extracting the head.

"The force exerted in turning the child had difengaged the placenta, which was the occafion of the flooding. The pelvis was fo narrow, that although I ufed all the precautions defcribed in the former cafes of this collection, yet I could not deliver the head fo fortunately as in my former attendance on this patient.

"As the mother recovered with great difficulty, I was forry on reflection that I had hazarded this method in fo weak a patient: I wifhed I had rather waited the efforts of nature, and if thefe had proved infufficient, that I had ufed the forceps, when the head came low down in the pelvis; or at leaft, if all her efforts had been infufficient to render that affiftance practicable, that I had delivered the child as in her firft pregnancy."

CASE XII.—The woman was attacked with colic pains, and convulfion fits. He was obliged to bring the child footling, from its prefenting with the arm: this he eafily effected, till it was extracted to the fhoulders, where it ftuck pretty much, and gave him great trouble in bringing down the arms. Then he tried, with his fingers in the mouth, to deliver the head, by pulling it upwards towards the pubis; but finding a great refiftance, and pufhing his fingers further up, he found the placenta down in the back part of the pelvis, which laft being very ftrait, had forced the head fo againft the pubis, that it refifted all the force he durft apply. He then introduced a finger between the head and that bone, to difengage it; but it anfwering no purpofe, he feated himfelf on the floor of the room, and ordering the woman's breech to be brought a little over the fide of the bed (fhe lying

in a ſupine poſition), he delivered the head by pulling the body of the child downwards. The child was dead, and, luckily for the woman, ſmall in ſize; ſo that ſhe recovered very well.

CASE XIII. and Supplement to CASE III.—A correſpondent of Dr. Smellie's was called to a well-made woman about thirty-five, who had ſeveral children. He found with her two midwives, who acquainted him that the waters had been come away about eight hours.

"Her pains," ſays he, "were ſtrong and quick. Upon touching her, I found a hand preſenting in the vagina. While endeavouring to diſtinguiſh which hand it was, it protruded through the os externum to the elbow. This was the firſt caſe that offered to me in this country, and as I was apprehenſive the head might perplex me if I delivered footling, I endeavoured to return the limb, and facilitate the natural delivery of the infant. The limb could be returned into the vagina, whence it often protruded. The contraction of the uterus was too ſtrong to admit my changing the poſition of the child, by forcing up. My hands being cramped, I was obliged to quit that attempt: but during theſe endeavours, I diſcovered that the ſhoulder and back preſented, with the head lying to the left ilium. After refreſhing the woman with cordials of her own, and encouragements, while I reſted my hands, I ſearched for the feet, which were quite up at the fundus uteri: theſe I ſecured between my fingers, and the arm re-entered as I brought them down. When I had them juſt without the os externum, I wrapped a piece of fine cloth about them, and held them gently, drawing with one hand, while I endeavoured to aſſiſt the poſition of the face, with the other ſlipped up along the ſternum.

"I found ſome conſiderable reſiſtance puſh up the hips a little, and gave the quarter turn. I then proceeded, and delivered the infant, with a turn of the umbilical chord about its neck; this I divided inſtantly, and extracted the placenta. After reſting a little while from her fatigue, my patient was put to bed: the child lived about half an hour."

CASE XIV. and Supplement to CASE III.—Mr. Mudge, of Plymouth, was ſent for to a woman who had been four days in labour, and the waters had paſſed off three days before. He found her very weak, and her pulſe was very much depreſſed. On touching her, he was very much ſurpriſed to find the arm hanging out of the os externum, and the ſhoulder quite filling the mouth of the uterus; it was extremely ſwelled, and quite black with the violence it had ſuffered for three days ſucceſſively, by the rude pretended aſſiſtance of the midwife. The chord came down by the ſide of the arm, the pulſation of which was evident enough.

He without great difficulty (the pains being luckily abſent)

pushed up the breast of the child, introduced his arm quite to the elbow into the uterus, before he could come at the feet, which he took hold of. The arm soon went up, and the delivery was accomplished: he wrapped up the child's arm in a cloth.

It was a stout boy, and both it and its mother did very well. No labour could have a more unpromising appearance, and yet it turned out very easy; the whole did not last above six minutes.

Chapman, in his Treatise on Midwifery (page 111), relates a case, in which the arm was taken off: the child was alive, and lived to be a man.

CASE XV. and Supplement to CASE IV.—Mr. Mudge was called to a patient an hour after the membranes were broken. She had some slight pains; but he could not, in examining, reach any part of the child.

After she had been two days in a lingering way, he at last felt some part presenting like the nates. She had not felt the child stir for many hours, and the meconium began to come off: although the pains gradually increased, yet the child did not advance. The patient's strength failing, he laid her across the bed, and introducing his hand into the vagina, found that the right shoulder presented, with part of the arm, not fallen down into the passage, but lying across the os uteri.

He then insinuated his hand into the uterus, along the belly of the fœtus, to search for the feet, and with great difficulty got down the left leg; but could not bring it without the os externum, so as to get a cloth round it, in order to assist the turning. He tried the noose several times; but it would bear no great force without slipping. A flooding coming on from the great force used in trying to bring down the other leg, which, with the breech, hung over the pubis from the abdomen, being very pendulous; he changed hands, the right being excessively fatigued, and endeavoured to come at the other foot with his left hand; but it was quite out of his reach, nor could he in the least turn the child at all; though he pushed up the shoulder with great force, while he tried at the same time to pull down the leg, that was in the passage.

All this time the woman was bleeding excessively, and he was afraid every moment that she would die under his hands. He then sent for the largest sized forceps, that are used in extracting the stone, and laid hold of the leg with them; but after several fruitless attempts could not move the child. He was almost fatigued to death, and in the greatest anxiety of mind to think he should see his patient die under his hands. He determined to make one final attempt to come at the right leg: he introduced his hand and arm into the uterus, and pushing still higher and higher, he at last got his arm so far till his elbow was in the

middle of the pelvis. By which means he had now an opportunity of bending his arm over the os pubis, and got hold of the foot, which he immediately grasped and brought down to the passage. The buttocks following, he soon delivered the child, which was very large and dead. The placenta was soon delivered; the flooding stopped at once, and the mother did well.

Dr. Smellie's observations on this case are very important. "I have," says he, "had several cases, wherein I have had much the same difficulty, and have been greatly fatigued before I could bring down the legs, especially in pendulous bellies, where the legs of the child were to the fore part of the uterus.

"The woman is kept much firmer, when laid in the supine position, and you come at the legs easiest when they are towards the back part or sides of the uterus; but when at the fore part you find them better, by having the patient lying on her side; because then you can stand behind, and your arm is not interrupted by the pubis so much as when in a supine position.

"I have also of late found, where the belly has been very pendulous, and I could not reach the feet easily in the side position, that by turning the woman to her knees and elbows, I came much readier to the feet, as that position takes off the great pressure of the uterus and child."

This was Daventer's method; and Dr. Gordon, of Glasgow, commends it, especially where the abdomen is pendulous.

He says, that one of the principal things to be known in midwifery, is the position that the patient is to be placed in when you want to turn the child and deliver it by the feet. The best way is to place her on her knees and elbows, with her breech raised higher than her head; for you operate much easier with your hand downwards than you can do with it upwards, when she is laid on her back; besides, the weight of the child assists you, when you push the body back in order to get hold of the feet. He says he always found this the best posture, until the feet descended to the os externum; when he turned the mother on her back and delivered her.

Case XVI.—A correspondent of Dr. Smellie's was called in by another practitioner, where the chin had presented. The first had several times tried to deliver with the forceps, and broke the lower jaw with his fingers. He then essayed to turn and deliver it by the feet, and in endeavouring to bring down one leg with great force, it was pulled off: a flooding coming on, and his strength being quite exhausted, the other was called.

The woman's strength was almost gone. He introduced his hand into the uterus, and, after great fatigue and sweating, he got hold of the other foot, over which he fixed a noose, which he twisted round one hand, while with the other he raised up the head and breast, and got the body delivered.

It ſtuck at the ſhoulder, but by giving it a quarter turn the obſtruction was removed, and at laſt the head was delivered, though not without a good deal of trouble and caution, on account of the largeneſs of the head, and the bad hold at the broken jaw. The child was dead, and the woman expired in ſeven or eight minutes from the great flooding.

" I wrote him," ſays Dr. Smellie, " that no doubt the gentleman, ſince he did not ſucceed with the forceps, acted right in trying to turn; but then when it required ſo great force (which undoubtedly brought on the fatal hæmorrhage) it would have been ſafer for the woman had he opened the head as it preſented, and extracted with the crotchet.

" However, it is impoſſible to judge, except when preſent, and we are too ready to reflect, after an unlucky caſe is over, that another method would have been better, though we acted then to the beſt of our judgment."

CASE XVII. and Supplement to CASE II.—This woman (the patient of a correſpondent) was about thirty; had been rickety in her youth; one ſhoulder was higher than the other; one of the oſſa pubes was conſiderably further protruded than the other.

Before he was called, ſhe had been three days in labour. The mouth of the womb was largely open. The head was well advanced in the pelvis. She had frequent pains; but the head did not advance further. On introducing his hand he found a great moiſture, and withdrawing it, perceived it beſmeared with meconium, whence he told the by-ſtanders that the child was either dead or very weakly. On enquiry, he was told that there had been no ſtoppage of urine. The poſition being ſuch as favoured the uſe of the forceps for extracting the child, he introduced it accordingly, not-doubting to find an eaſy delivery, as he had often ſeen and experienced with the help of that inſtrument; but, contrary to expectation, he could not move it with all his force.

After this he withdrew the forceps and raiſed the head of the child, on which the urine flowed out to an incredible quantity. Believing the diſtenſion of the bladder had hindered the head from advancing, he again tried the foreceps, but could not mend the matter. On examining, he found he could introduce his hand without much difficulty: he then turned the child, and extracted it by the feet, after being fatigued almoſt to death. The woman recovered.

He deſired Dr. Smellie's opinion of the labour, and begged to know if he thought it not always ſafer in rickety patients to turn the child.

" I wrote to him," ſays the doctor, " that I had oftener than once, in the beginning of my practice, in thoſe caſes, brought the child footling, and although I had ſometimes ſucceeded, yet in others I could have wiſhed after the head was turned up into the

uterus, that it were ſtill in its firſt place; becauſe, when the body was delivered, the head ſtuck ſo above the pelvis, that it was not poſſible to ſave the child; and the parts of the woman were ſo bruiſed, that if ſhe did not die, ſhe recovered with great difficulty: that no doubt it was our duty to do all we could to ſave the child; but not ſo as to endanger the woman's life: however, in this caſe, as he could ſo eaſily introduce his hand, I thought it was right to try that method to ſave the child's life."

CASE XVIII.—A ſurgeon in Harwich, on the twenty-fourth day of December, was called, at ten o'clock, to a young gentlewoman of a delicate conſtitution, in labour of her firſt child.

The midwife had been with her the greater part of the preceding night. "She told me," ſays he, "that the waters broke at five in the morning; that the patient had no pains ſince, except a few ſlight ones, which were chiefly in her back and loins; that the parts were ſo tight ſhe could make no way for the child; but ſhe felt nothing uncommon.

"Upon examination, I found the os externum ſo tight, that I had ſcarce room to introduce two fingers; but with my firſt I felt the arm much ſwelled, and far advanced in the vagina in a doubled form, the fore-arm being reflected upwards.

"The os externum felt thick, but lax and yielding.

"Being ſatisfied in theſe particulars, I could with great certainty foretel the difficulty that would attend the delivery, which I at laſt ſurmounted in the following manner.

"Finding the patient had not been much fatigued, either by pains or the midwife, I placed her upon her ſide, with proper aſſiſtants to ſupport and keep her ſteady in bed.

"I firſt began to lubricate and dilate the parts gently, by which means, in about half an hour, I made room for the admiſſion of my hand, which I introduced in a flattened form to the brim of the pelvis, which I felt narrower than uſual, occaſioned by the laſt vertebra of the loins and upper part of the ſacrum being too near the oſſa pubis.

"I found alſo the top of the ſhoulder of the child entering the brim of the pelvis, the breaſt towards the ſacrum, the head over the pubis, and the feet at the fundus uteri.

"I endeavoured to raiſe the preſenting parts, and bring down the legs; but the dryneſs and ſtrong contraction of the womb, which together with the pains now acted forcibly againſt me, ſoon convinced me that it was impoſſible even to move them an inch.

"This method not ſucceeding, I puſhed up my hand, by which I ſtretched the ſides of the uterus, and by that means with great difficulty reached the feet, which I endeavoured to bring down; but my hand and fingers were now ſo cramped, that I could not move them.

"I reſted a while, in which interval the patient was ſeized with

a deliquium, which took off the pains and contraction, so as to give more liberty to take hold of one leg, which I brought down as far as the bending of the knee would allow me, but could not bring down the other.

"Having brought out my hand, I placed a noose upon my fingers, and with great difficulty I put it over the ankle; then taking hold of the garter with my external hand, I pulled down with this, and shoved up with that in the womb, and by these means turned the head and shoulder to the fundus uteri; the leg was brought through the os externum, and the thigh into the vagina.

"Having succeeded so far, I withdrew my hand from the womb, and assisted with both externally, pulling from side to side, and giving the proper turns (according to the usual practice), till the body was extracted as far as the breast.

"Finding the body was obstructed in coming further, by the arm lying across; I brought down that, and then the other; and after the shoulders were come through, I with two fingers in the mouth pulled the chin to one side, and brought it into the pelvis; then turning the patient to her back for more liberty, I moved the forehead to the concavity of the sacrum, and delivered the same with a half-round turn upwards.

"I tried all the common methods to recover the child, but to no purpose. The patient enjoyed a good night by the help of an opiate, and afterwards recovered."

Preternatural Cases, wherein the Women were delivered by the Assistance of the Crotchet.

Case I.—A midwife, who was attending a woman in the country, found, as she imagined, after the membranes were broken, that, instead of the head, one of the arms was pushed down into the vagina; and acquainting the friends with this circumstance, they immediately sent for Dr. Smellie.

"I found," says he, "when I examined, that, instead of an arm, there were two legs lying double in the vagina, and the knees presenting: at first, indeed, I found but one, which was lower than the other, and I imagined it was an arm, as the child was but small; but going round the vagina with my finger, I felt the other; I distinguished the knees by their having a more obtuse feel than the elbows; and bringing one of them through the os externum, was much better pleased to find it was a foot. Having placed the woman in a supine position, I brought down the other leg, and, having wrapped a cloth round the feet, I pulled the child gently along. As it was one of the first cases of this kind which I had seen, I had not the precaution to introduce my hand to feel, before I brought down the body, whether the head was low down, or up towards the fundus; for after I had brought

the breech down to the os externum, and turned the back part of it from the right side of the pelvis to the pubis, I could not bring the body lower down than to the small of the back. Finding, after reiterated trials, that it would not move further, I pushed up the fingers of my right hand along the belly of the child, and found the head folded down on the breast at the side, and both squeezed together in the pelvis. I tried to push up the body, and my hand, further, to raise the head; but the body filling up the pelvis, and the head and breast being squeezed together by the former force, in pulling down, I could not, after several trials, alter the position. I was then obliged to pull down the body with greater force, till I found, after repeated trials, that the vertebræ of the loins were so overstrained, it was impossible to save the child. I then introduced the crotchet betwixt the head and the breast, and fixed it on the middle of the sternum, as I afterwards discovered, pulling the instrument with my right hand, and the body of the child with the left, I endeavoured to extract. Finding the parts tear down, and that the shoulders did not advance, I pushed the crotchet further up, and got a firm hold above one of the clavicles, which brought down the shoulders, and the head followed with little difficulty, the child being small.

"This was a caution to me in the sequel, to examine the position of the head before I brought the breech into the passage, that I might raise it, so as to prevent any such obstruction."

CASE II.—"Being called by a midwife in the morning, I was told that the membranes had broken about eleven at night; that the breech presented; and though the pains had been strong, yet it had not advanced in the least for two or three hours, notwithstanding the efforts of the midwife, who had tried several times, with all her force, to bring it along.

"As the woman and the pains were now weaker, I tried, while she lay on her side, to help along the breech, with the assistance of my fingers, introduced to the outside of each groin. This method not succeeding, I pushed up the breech with my right hand to bring down the legs, which lay extended up the fundus uteri, towards the left side; but the contraction of the uterus was so great, that although my hand was up at the legs, I could not possibly bring them down; the pressure of the breech, which I could not raise higher than the brim of the pelvis, joined with the narrowness of the same, so pressed and pained the muscles at the fore part of my arm, that I was obliged to withdraw it two or three times. These attempts proving abortive, I turned her to her knees and elbows, and introduced my left hand, as the most proper when in that position, and the legs to the left side. The breech receded further, and my arm was not so much confined; but the contraction of the uterus was so great at the fundus, that I could not possibly bring down the legs, although I

refted feveral times, to keep up the ftrength of my hand and arm; at laft they were fo fatigued and cramped, that I was obliged to defift. Being afraid of tearing the uterus from the vagina, I altered her from this pofition to her back, keeping her fhoulders high, and tried again, in time of pain, to help the breech along, as at firft, but to no purpofe. I then had her breech raifed with pillows, and her head and fhoulders laid lower; then I pufhed up my right hand, that was a little recovered from the former fatigue, but failed in this alfo, after feveral ftrong efforts.

" I was now fo wearied that I was obliged to reft, and confider what was next to be done. The child, I found by thefe trials, was large, and the pelvis diftorted at the upper part of the facrum; and indeed the projection of thefe bones had bruifed and hurt the back part of my hand at the laft trial. By thefe feveral endeavours, the placenta, I fuppofe, being partly loofened from the uterus, brought on a difcharge of blood, which made me afraid of tracing up again into the uterus. I attempted to bring the child double, with my fingers on the outfide of the hips or groins, in time of the weak pains; but finding this was to no purpofe, I introduced the curve of one of the handles of the forceps on the outfide *, betwixt one of the thighs and the abdomen of the child. When I found the point fufficiently through betwixt the thighs, I introduced two fingers of my left hand to the groin of the oppofite hip, then pulled with that hand and the blade of the forceps with the other; but ftill finding this force was not fufficient, I introduced the handle of the other forceps at the other fide, and pulled by both with greater and greater force, which moved the breech to the lower part of the pelvis, and the hams below the pubis; but I found, in time of pulling, that one of the handles flipped from the joint on the thigh, which it fractured. I then brought down the legs, and after turning the fore parts of the fœtus to the back part of the uterus, I brought down the body, and tried to deliver the head, as defcribed in the cafes where the legs or breech prefented; but all thefe different methods failing, I tried firft to deliver the head with the fhort forceps; but they flipping feveral times alfo, I was obliged to take the affiftance of the crotchet in the following manner.

" As the body and arms were delivered, and the neck ftretched to a confiderable length, I directed an affiftant to hold up the body of the child towards the pubis and abdomen of the patient, by which means I had more room to introduce the fingers of my left hand up betwixt the right fide of the pelvis and child's head: even this I was obliged to raife, to come at the os uteri. I then

* At that time made of fuch a form as to admit of the application. Wooden handles were afterwards fubftituted.

with my right hand introduced the crotchet along the inside of my left (the point towards my hand) to the head, then turning the point to the os frontis of the child, which lay to that side, I pushed up the instrument betwixt my fingers and the left temple (which lay toward the right groin) to the upper part of the frontal bones, where I tried to fix the point; but this being a straight crotchet (for I had not then contrived the curved crotchet, which is principally useful in this case) the point did not take sufficient hold, or go sufficiently up to fix in the skull, but slipped two or three times, and only tore down the scalp. I then withdrew the crotchet in a cautious manner.

"After having rested a little, I again introduced my left hand in the same manner, but more backwards, and the crotchet along the right temple, above the fore part of the ear, where at last, with some difficulty, I fixed the point. I now brought down my left hand, took hold of the crotchet with it, laid the body of the child on that arm, and placing the fore and middle fingers of my right hand over the shoulders, and along each side of the neck, I began to pull down the head, and gradually increased the force. Finding the crotchet had a sufficient hold, and did not slip as before, and that the head did not yet begin to move, I stood up, and pulled the body and crotchet upwards to the pubis, with great force, which brought down the forehead to the lower part of the pelvis, at the right side of the sacrum and os coccygis: then turning it more backwards, I delivered the head, by bringing it with a turn upwards from below the pubis, where it turned as upon an axis, and prevented the laceration of the perinæum and parts below, which at that time were stretched in form of a large tumor.

"I examined the child's head, and found the skull was torn open about two inches at the above-mentioned place, and some of the cerebrum had been evacuated in time of pulling; a circumstance which diminished a little the size of the head.

"When I was first called, I desired the midwife to allow my pupils to be present; a proposal to which she and the woman assented, but restricted the number to four, on condition that I should deliver her without any other consideration for my trouble.

"This case fatigued me so much, that I was scarce able to move my arms to my head next day; and although the weather was not warm, I sweated excessively."

Case III.—"The woman was young and strong. This was her first child; the membranes broke the day before; she had strong pains all night. When I arrived in the morning, I found the shoulder forced down to the lower part of the pelvis.

"Having placed her in a supine position, with her breech high and her head and shoulders low, I was obliged, after dilating

the os externum flowly, to ufe great force before I could raife the fhoulder, fo as to introduce my hand into the uterus. I found that the left fhoulder prefented, the head was turned back to the right, and the fore parts to the back part of the uterus.

"The pofition being known, I tried to pufh up my hand to come at the feet, which were folded up to the fundus uteri, but turned, in operating to the right fide. Finding that I could not poffibly reach them with my right hand, which was now beginning to be weary and cramped, I withdrew it, and attempted to introduce my left; but the head was fo firmly engaged at the right fide, that I could not poffibly gain admittance. I again tried with my right, and repeated one effort after another, changing hands, and altering the pofition of the patient, till I was at laft exceffively fatigued, and obliged to defift. I refted about half an hour, confidering what I fhould do next, and waiting until I fhould recover the ufe of my arms.

"By thefe efforts, and the exertion of great force, a confiderable flooding was brought on; and this alarmed me not a little, efpecially as it was one of my firft cafes, and I had not yet attained that calm, fteady, and deliberate method of proceeding, which is to be acquired only by practice and experience. I had over-fatigued myfelf, from a falfe ambition that infpires the generality of young practitioners, to perform their operations in the moft expeditious manner.

"Finding I could not reach the legs, I infinuated my right hand up to the left fide of the child, and along that introduced a crotchet with my left above the ribs: there this inftrument being firmly fixed, I withdrew my right; then taking a firm hold of the handle of the crotchet with that hand, I pulled down the fide, while I pufhed up the fhoulder with my left. By thefe means, after repeated trials, and ufing a good deal of force, the head and fhoulders were fo raifed, that I was able to bring down the body double, and the head followed.

"I was glad to find, that although the child came in this manner, and all of a fudden, the woman was not at all lacerated or hurt.

"When I examined the child, I found the crotchet had fixed firft on the left fide of the belly, which it had torn open, as well as the falfe ribs; fo that moft of the contents were evacuated, and the body was allowed to pafs along double.

"One miftake I made at firft, fatigued me much before I was aware: my hand had paffed up on the outfide of the membranes."

Case IV.—"The midwife told me, that when fhe was called the membranes were broken, and the hand lay in the vagina. A gentleman in that neighbourhood had been called, and attempted delivery; but hearing I was fent for, he took horfe and rode off.

" I found the arm, ſhoulder, neck, and part of the ribs, pulled without the os externum. When I enquired of the midwife, if theſe parts were forced down in that manner by the pains? ſhe ſaid, that before the other practitioner came, the pains had puſhed the child ſo low, that the arm came out; but that ſhe had folded it up again into the vagina, and kept it there till he arrived. She owned, that after he had failed in attempting to turn the child, ſhe aſſiſted him in pulling at the arm with great force, but could not bring the body further; and when he propoſed taking off the arm, the woman deſired I might firſt be called.

" I then, with the midwife, inſpected the parts, becauſe I could find no fundament, and ſhewed her that the vagina and rectum were torn into one.

" The arm, though not much ſwelled, was livid, as well as the other parts of the fœtus, that appeared externally; for it had lain in that manner three or four hours at leaſt, from the time I was ſent for.

" I never expoſe the parts of my patients, except on ſuch extraordinary occaſions, when it is neceſſary to obſerve whether any harm has been done.

" After I had endeavoured, without ſucceſs, to puſh up theſe parts into the uterus, firſt by placing the woman in the ſupine poſition, and afterwards on her knees and elbows, I was obliged to introduce the crotchet, and deliver the child in the ſame manner as directed in the former caſe.

" The parts were much inflamed; but by the application of bread and milk poultices, the ſwelling ſubſided, the lacerated parts digeſted, and ſhe with difficulty recovered.

" About two months after her delivery, being in that part of the country, I called at her houſe, and, contrary to what I had obſerved in all other caſes of ſuch large lacerations, in which the parts are commonly ſo weak as not to be able to retain the fæces, the parts, in her, were ſo contracted, and the paſſage was become ſo narrow, that ſhe voided them with great difficulty."

Case V.—" The midwife called on me, and begged I would preſcribe ſome medicine to promote the delivery of a woman whom ſhe had attended two days; ſhe ſaid the membranes had broken ſoon after ſhe went thither, and one of the arms coming down, was puſhed without the parts, but ſhe had kept it warm. I told her, the woman ſhould have then been delivered, and no medicine could do any ſervice.

" In about two hours I was ſent for, and found the fore-arm without the os externum, much ſwelled. The woman was little, not young, and this the firſt child. I tried ſeveral times to puſh up the arm and ſhoulder of the fœtus, but was prevented by the largeneſs of the arm and ſmallneſs of the pelvis. I attempted to

bend the arm (which was the right), fo as to fold it up in the vagina, that I might pufh it up before my hand; but the fwelling was fo great at the elbow that I could not bend it. I then pulled and twifted round the arm, and endeavoured to feparate it from the fhoulder, but could not with all my force. I pufhed up the fingers of my left hand to the armpit, and tried to fnip through the fkin and ligament; but it lay fo high, and was thrown fo much forwards by the diftorted parts at the brim of the pelvis, that I could not get up my fingers or fciffars fufficiently to that part. I wrapped the fore-arm in a cloth, and pulled and twifted it with great force, fo that at laft it feparated at the elbow. I was forry for this incident, apprehending there was lefs hope of pulling off the arm, when the firm hold of the fore-arm was loft; however, contrary to expectation, I found the fame advantage as if it had been pulled from the fhoulder; for the arm being fhort, eafily folded up in the vagina to the fide of the fœtus. I now gave both the woman and myfelf fome refpite, that we might recover from fatigue. Having refumed my labour, the arm and fhoulder were pufhed up into the uterus. Then I felt at leifure the pofition of the child. The head folded back betwixt the fhoulders, above the pubis; the left arm and leg lying over the breaft, and to the fide and back part of the uterus. I now repeated my efforts, and, by pufhing up higher, got a firm hold of that foot betwixt two of my fingers; pulling down this, and pufhing up the breaft, I brought the leg down without the os externum. Having wrapped it in a cloth, and taken a firm hold with my right hand, I pufhed up my left, to try to bring in the right hip, which lay over the pubis; but found it impracticable to reach fo high, on account of the narrownefs of the pelvis. Endeavouring to pull the left leg and thigh, fo as to bring the hips lower, after reiterated efforts, and increafing the force every time, inftead of bringing the body lower, I pulled the thigh from the hip. I was obliged to reft again, to recover from this fecond fatigue. I again introduced my right hand into the uterus, and with great difficulty brought down the right leg; but the pelvis being too narrow to allow paffage for the body, which was large, I had recourfe to the crotchet, with which I tore open the belly. I was obliged to ufe the fame method in tearing open the breaft, to bring down the fhoulders and the arms; and afterwards to reft a confiderable time to recover my ftrength, which was almoft exhaufted, before I attempted to deliver the head, which I was certain would require ftill a greater force. Finding the face and forehead were to the left fide, and a little forwards towards the left groin, after getting an affiftant to hold up the body of the child, I infinuated my right hand at the left fide of the facrum, and introduced a crotchet in the fame cautious manner as de-

ſcribed in the ſecond caſe of this collection, along at the left ſide of the bones that were diſtorted, and formed a large hollow at that part, which allowed room for the inſtrument to paſs eaſily. Having now altered my crotchet from the ſtraight to the curved form, the point went higher up, and fixed near the vertex. Bringing down my right hand, I pulled gently at firſt, till I found it was firmly fixed; I then began to extract with greater force, while at the ſame time I pulled the body with my other hand. By reiterating theſe efforts, I got the head at laſt delivered, but not before I changed hands, and was obliged to pull the crotchet with my left, which brought the forehead from the left groin, backwards to the ſide of the ſacrum.

"The crotchet had torn all the left bregma, down to the temple; a laceration, which allowed a large part of the cerebrum to evacuate, and the bones of the cranium to collapſe. The great force uſed in turning the fœtus had brought on a flooding, which diminiſhed on the delivery of the child and placenta; part of the laſt, however, adhered ſo firmly to the right ſide of the fundus uteri, that I was obliged to ſeparate it with the fingers of my left hand. As the woman complained of great pain, and her pulſe was a little ſunk from the large diſcharge, I ordered an anodyne mixture, with twenty drops of laudanum and half an ounce of ſyrup of poppies, which had the deſired effect, by procuring reſt and a plentiful perſpiration; and although the weakneſs and pains continued for many days, yet ſhe recovered.

"About two years after I was again ſent for; but being engaged, another gentleman was called; who told me that he was obliged to open the head, and was vaſtly fatigued in extracting both it and the body: this violence threw the woman into a violent fever that deſtroyed her.

"Probably the loſing ſo much blood when I delivered her, might prevent the inflammation and fever.

"This caſe ſo fatigued me, that I was obliged to ſhift, and go to bed after I was carried home in a chair. My hands were ſo ſwelled that I could only uſe my fingers like a gouty perſon for a day or two."

CASE VI.—"There had been two midwives with this woman for two days, one of thoſe was her mother. Both arms had been down moſt of that time, and theſe they had often pulled to bring the child as it preſented.

"I found both arms pretty much ſwelled, and one was almoſt pulled from the ſhoulder; for it only hung by part of the ſkin, which I ſnipped off with the ſciſſars.

"I inſpected the part, and found the remaining arm and parts of the woman livid, but not torn.

"The patient was then flooding, and had loſt a great deal of

blood, from which, joined with the long fatigue of labour, her ſtrength was ſo exhauſted, that ſhe appeared in a dying condition.

"I ſuggeſted my apprehenſion to the huſband and friends, who begged me, if poſſible, to deliver her before ſhe expired.

"Contrary to my expectation, although the breaſt was pulled low down, I eaſily puſhed it and the arm up into the uterus, and brought the child footling.

"I had no hopes of her recovery, although ſhe ſeemed to revive a little, from the joy of being delivered; becauſe I was pretty certain that a mortification was begun, from the livid appearance of the external parts, and her complaining of no pain, when I introduced my hand into the vagina and uterus.

"The placenta was all detached, and lying looſe in the uterus. This was not her firſt child. I was called in the evening, and ſhe lived till next morning."

Case VII.—"One of the arms had deſcended, and been ſo pulled by the midwife, that the ſhoulder was down to the os externum.

"I tried to raiſe the ſhoulder by paſſing up along the arm, which was exceſſively ſwelled and livid, it having been down in that poſition above four-and-twenty hours; but I could not introduce my hand. Conſidering that the child was probably dead, from its being ſo long in that ſituation, and its not being felt to move by the mother for many hours, I thought it was moſt expedient to ſeparate the arm from the ſhoulder. This laſt being low down, I guided the points of the ſciſſars to it, and eaſily ſeparated the arm, partly by cutting the ſkin and ligaments, and partly by pulling and twiſting.

"In puſhing up the ſhoulder into the uterus, I found that the pelvis was ſmall and the child large. I brought down only one of the legs, which was pulled off as in Caſe V., then with great labour I brought down the other, which gave way alſo by the force of pulling.

"I was afterwards obliged to tear down the body with the crotchet, and even to fix the ſame inſtrument on the head.

"Being the ſtraight kind, it ſlipped ſeveral times, and hurt the inſide of my left hand in two places, while I guarded the point from hurting the vagina of the patient. At laſt, gaining a firmer hold above the ear, I fixed the fingers of my left hand over the ſhoulders, and pulled with great force, both at the body and crotchet. Finding it did not move, I wrapped a cloth round the ſhoulders, and pulled at them with ſo great force as almoſt to ſeparate the head. By theſe means the head was brought a little lower; yet, not daring to exert again ſuch violence at the body, I pulled by the crotchet, which brought the head down to the os externum, and in raiſing the body and pulling it upwards, it at laſt ſeparated.

"The head, however, being brought low, I took hold of the under jaw, and pulling at that, while I exerted more force at the crotchet, the head was also delivered.

"The woman behaved with great courage, although she had been much fatigued, and weakened by a flooding brought on by the great force that I was obliged to exert in turning the fœtus. This woman also recovered, contrary to every body's expectation."

Case VIII.—"The midwife told me, that when she was called, the membranes were broken, and although the mouth of the womb was very little open, she found that the child did not present fair.

"A gentleman was sent for, but he being otherwise engaged, could not attend. Mr. Smith was then sent for at six, and finding that the pains, which were frequent and strong, could not push down the presenting parts to open the os uteri, he tried to stretch it; but not being able to dilate more than to introduce two fingers, and a flooding coming on, he sent for Mr. Mackenzie, who then attended me as senior pupil.

"He likewise tried to dilate; and finding, although the os uteri yielded considerably, he could not possibly introduce his hand, he desired I would come about seven.

"He told me, that the funis was fallen down into the vagina, and that he had not felt any pulsation in it; that he had dilated the os uteri considerably; but that his hands being cramped, and fatigued, he was obliged to desist.

"I felt the woman's pulse, which was still pretty good, and not much sunk. Considering that the pains were now weak, and could do little service in pushing down the child to stretch the os uteri; being also afraid that the woman would grow weaker and weaker, and having never before failed in stretching the os uteri in women that had children before, which was her case; I resolved to attempt it without delay.

"I examined in the side position; but as that and the supine had been tried before, I had her placed on her knees and elbows, and found that the mouth of the womb was so largely opened, as to receive all my fingers up to the middle of the third joint; but I could not stretch it so as to introduce my hand.

"I then rested, and felt more exactly the position of the child. The breast and neck presented, and the chin was to the right ilium. I then considered, that if I could bring in the face, and keep up the woman's strength, the pains might return, and force them down gradually, dilating the os internum at the same time.

"For this purpose I had her changed to the supine position, and introducing the fingers of my left hand, with great difficulty got two of them above the chin into the mouth, and tried to pull it from the side into the middle of the pelvis; but the neck and

breaſt were ſo engaged in the middle, and the head preſſed back on the ſhoulders, that I could not poſſibly alter the poſition.

" Being now certain that the child was dead, I introduced a crotchet covered with the ſheath along the inſide of my left hand, and fixed it, when unſheathed, in the under jaw. Finding, however, that it would tear down the jaw, and not bring in the face, I withdrew the inſtrument.

" The funis all this time was a great interruption by falling down and entangling my fingers. I again gave the woman ſome reſpite, eſpecially as ſhe was now growing a little faint, and the flooding, which had abated, was returned.

" After ſhe was recruited, I tried again to dilate the os uteri, having found in other caſes, that it dilated eaſily when the patients were faint and weak; but found the ſame difficulty as before.

" I once more endeavoured to introduce the crotchet at the other ſide, to come at the ſhoulder, in order to try if the pulling down of the parts would ſtretch the os uteri better than puſhing up.

" I was apprehenſive of uſing any greater force by puſhing up, leſt I ſhould tear the uterus from the vagina; but finding that I could not fix the crotchet to advantage, I again withdrew it.

" All this time the os uteri felt as if it was two inches thick. The woman being much exhauſted, I had her laid in an eaſier poſition, and let her lie a conſiderable time, both to recruit her ſpirits, and to ſee if the pains would return. In the mean time I ſent for Mr. Burnet, who was firſt called, who being now diſengaged, came immediately. He alſo endeavoured to introduce his hand; but finding it impoſſible, we all agreed to deſiſt, and to wait, as the flooding was abated. For, although ſhe had loſt a good deal of blood, yet it had been very gradually diſcharged.

" Our intention was to ſupport her with broths and nouriſhing things, and as ſhe inclined to ſleep, to indulge her with ſome repoſe. Meanwhile we went to breakfaſt at a coffee-houſe, where we propoſed to wait the iſſue of this uncommon caſe. I reſolved, if happily ſhe ſhould recruit after ſome reſt, and recover from the low faintiſh ſtate in which we left her, to try again in a gentle manner to ſtretch the os uteri; and if that did not ſucceed, to dilate it with the ſciſſars, as in the Xth and XVIth caſes under this head.

" In about half an hour, one of the pupils being ſent to ſee how the patient reſted, was met by the huſband coming in a great hurry, to acquaint us that his wife was fallen into convulſions. Before we reached the houſe ſhe had expired; a circumſtance which ſurpriſed us not a little. I indeed was in hope when we left her, that ſhe would have enjoyed ſome ſleep, which might have recruited her ſtrength; and then the os uteri would probably

have yielded, as I had found in the like cafes before. I had even in a few cafes known the os uteri tear, and the patient recover.

" Rather than let the woman expire without any chance of being delivered, I had determined to dilate the os internum. This expedient, however, I think fhould never be attempted, but in the laft extremity.

" I reflected after this fudden change, as the flooding was not violent, and the woman at firft not fo very weak, whether it would not have been better practice to have waited longer for the efforts of nature to open the parts.

" This cafe ought to be a caution to all practitioners, to wait the efforts of nature, and not to ufe too great violence in ftretching the os uteri, efpecially when the patient is not in abfolute danger.

" On the other hand, if thefe efforts had not been made till the woman was weak, I fhould have thought we were too long in affifting; efpecially as I never met with a cafe of this kind before, where I did not deliver the patient.

" The membranes had broken the evening before, and the midwife, by an uncommon feel of the parts that prefented, fufpected that the fœtus prefented wrong.

" Mr. Burnet, who had the care of the poor of the parifh, when called, was not at home. She was in ftrong labour moft of the night, but had not force to pufh down the child in that double pofition to open the os internum. When the firft pupil arrived at fix, the pains became weaker, and a fmall flooding had begun.

" All thefe circumftances confidered, feemed to indicate the practice we followed preferable to delay, efpecially as we did not expect that the patient would have been carried off in fo fudden a manner."

Case IX.—" This cafe happened to one of the poor women, whom all my pupils were allowed to attend. One of them delivered her of one child, and my midwife finding that there was a fecond prefenting wrong, immediately fent for me. The membranes of the fecond had broken immediately after the firft was delivered.

" Finding the face prefented, and having put the patient in a fupine pofture, I allowed all prefent to examine the pofition.

" Then, as the waters were not all gone, I very eafily turned the head up to the fundus, and brought down the legs.

" I obferved, that the child had been dead many days, from the circumftance of the legs being livid, and moft of the fcarf-fkin ftripped off. A cloth being wrapped round the legs, I tried to pull down the hips; but could not bring them further than the brim of the pelvis. I introduced my right hand betwixt the facrum and thighs, and found that the obftruction proceeded

from the abdomen's being exceſſively ſwelled, and turned to the back part of the uterus. I again pulled the legs with greater force; but began to be afraid they would ſeparate from the body. I introduced the fingers of my left hand to the ſwelled abdomen, and along that the ſciſſars with my right, and puſhed them into the abdomen of the fœtus, juſt above its pubis. Withdrawing the ſciſſars, I introduced two fingers into the opening, and pulling there with my fingers, while I graſped the legs with my other hand, tried to bring down the body; but being obliged to increaſe the force, all of a ſudden and unexpectedly the hips ſeparated from the body at the loins.

"Having now no hold to pull by, I introduced my left hand into the uterus, and along that the crothet with my right: fixing this inſtrument on the ribs, I began to pull; but the hold gave way. I made ſeveral attempts in the ſame manner, fixing the crotchet higher and higher, and in different places; but as often the parts tore down, though the body did not move.

"I endeavoured to keep it firm with my left hand, while I fixed the crotchet with my right; yet the body was ſo ſlippery, that it could not be held firm.

"My being obliged to bring out my left hand, as often as the hold gave way, with the crotchet, to guard its hurting the patient or my hand, fatigued me ſo much that I was obliged to reſt two or three times. At laſt, tracing up with my hand further than before, I again introduced the crotchet, and got a firm hold above the ſhoulder; then bringing my hand lower down, I took hold of the vertebræ of the back. By theſe holds I brought down the body, and the head followed eaſily, as the child was not large.

"I have had ſome caſes of the ſame kind ſince, in which the delivery was retarded by the tumefaction of the abdomen; but I pulled at the legs with more caution, for fear of the ſame accident, and brought down the body with the blunt-hook or crotchet."

Case X.—"The midwife informed me, that ſhe was called about two in the morning, and found the woman in labour, with a ſmall degree of flooding; but that it grew more violent as the pains increaſed.

"She ſignified to the friends, that the patient was in great danger, and about eleven in the forenoon I was called: the membranes were broken, and the diſcharge diminiſhed. In time of a pain I examined, and found the face of the child preſented. The os uteri was open about the circumference of half-a-crown: it felt rigid, but very thin.

"This was her firſt child, and labour had come on two months before her full time.

"Her pulſe was low and weak: ſhe had fainted ſeveral times;

but ſeemed to recruit a little, when told that more aſſiſtance was called, and begged earneſtly to be relieved.

"I ordered her to take, every now and then, a little red wine burnt; and waited to ſee if the pains would return as ſhe recovered ſtrength.

"I alſo preſcribed an anodyne and aſtringent mixture, two ſpoonfuls to be taken every half hour.

(No. 14.) ℞ Tinct. Roſæ ℥iv.
Sp. Nucis Moſchat. ʒiß.
Tinct. Opii. gtt. xxx.
Syr. Papav. alb. ℥ß. Miſce.

"I was again called in about two hours after, and informed that although ſhe lay quiet, yet ſhe had enjoyed no ſleep; and that the faintings had returned.

"As ſhe ſeemed to be in imminent danger, I tried, as ſhe lay on her ſide, to ſtretch the os uteri, and my efforts ſeemed to bring on a weak pain; but finding this had no effect, I gradually dilated the os externum, till I could introduce my hand into the vagina, and then began to ſtretch the os internum with the fingers of my left hand contracted in a conical form; but although the os uteri was ſo dilated as to receive my thumb and four fingers, and felt as thin as the edge of a piece of parchment doubled, I could not ſtretch it wider, even although I proceeded in a ſlow manner and at intervals. Finding the flooding return, and being afraid ſhe would be loſt if not ſoon delivered, I told her friends, this was the only chance ſhe had of being ſaved. I went to work again, and uſed greater force than before; but to as little purpoſe: I could do nothing but cramp and weary the fingers of both hands.

"While I reſted, I began to reflect that I had known ſome of my patients recover in caſes, where the uterus tore in ſtretching, and that ſome of them had even recovered without any unfavourable ſymptom following. As this, therefore, felt ſo thin and rigid, I found no way could be taken but to make an inciſion on the os uteri. For this purpoſe I inſinuated two fingers of my left hand into it, and with my right introduced a pair of ſciſſars betwixt the fingers. With theſe I endeavoured to ſnip the part; but finding I could not manage ſo as to cut through the edge, I puſhed one of the points within three or four lines of the edge, and the other on the inſide, and ſnipped through that part which was at the left ſide, but a little forwards, to prevent the laceration that happened afterwards, from affecting the bladder, rectum, and large veſſels at the ſide of the uterus.

"Withdrawing the ſciſſars, I introduced my left hand, and found the ſnipped part gradually give way ſo much as to admit my hand, though ſlowly, and with ſome difficulty, into the uterus.

where I easily turned and delivered the child by the feet. The child, however, was dead.

"Although there was a pretty large discharge, yet it gradually abated after the placenta was delivered. She continued in a weak faintly condition till the evening, when she fell into little slumbers; but was attacked every now and then with cold and hot fits. I had given her several times a little of the anodyne mixture, also some burnt wine and chicken broth to support her, and recruit the exhausted fluids.

"Next day, as the cold shivering returned once in three or four hours, I ordered some extract of the bark to be dissolved in red wine, and given betwixt the shiverings. The discharge was moderate; but nature being so much exhausted, she died on the fourth day."

Case XI.—"I was called in the evening, to a woman near forty, in labour of her first child.

"The midwife informed me, that she had attended the patient two days; that the pains had been strong since morning, and after the waters came off; but that the head lay high, and did not advance.

"I understood by other accounts, that the woman had been put too soon on labour, and was much fatigued. I felt both the os internum and externum largely open, by the midwife's having, as she said, worked hard to bring down the child, whose head lay above the brim of the pelvis.

"The woman being much fatigued with fruitless pains, that were much abated, I had her put to bed, to try if she could enjoy some rest; and desired her not to force down but when the pains obliged her. As she was costive, her pulse full, and quicker than usual, and her skin hot and dry, she was immediately blooded, and procured plentiful passage with a clyster. She enjoyed several refreshing sleeps betwixt the pains till morning, when the pains grew stronger, but still had little effect in advancing the head.

"The pains again falling off, I was apprehensive, that if I waited longer the woman might soon be in danger, and not imagining that the child was so large, I thought it was better to try and deliver it by the feet. It required a great force to turn the child, so as to bring down the legs, and even after that, to deliver the body and arms; so that I was obliged to rest several times. I afterwards used all the caution imaginable to bring down the head, so as to save the infant; but at last was obliged to increase the force to deliver the woman, and pay less regard to the child. By these last violent efforts, both the under jaw and neck began to separate. I was obliged to desist, as I found that one of the joints of the neck was entirely separated, and that only about one half of the skin of it remained untorn. I thought it would be easier

to fix the crotchet on the head now, than when separated from the body; for, although the hold at the neck was slender, yet it kept the head steady. I directed an assistant to hold up the body of the child, while I introduced my left hand along betwixt the right side of the vagina, as the woman lay supine. Then I introduced the crotchet, and delivered the head, though not without a good deal of force, and difficulty in fixing the crotchet, which was the straight one.

"Even if I had at this time known the use of the forceps, they would have been of no service in this case; because the head was so large, and so little advanced in the pelvis. The fault was in not waiting longer; for I have had many cases since, where, waiting patiently, the head has advanced, and been delivered with the pains or with the forceps. The pelvis was not narrow."

Case XII.—"This woman was remarkably tall, and to outward appearance well formed for bearing children; but on enquiry after delivery, I found that she had been sickly and weak for the first four or five years of her infancy.

"I was called to her, when she had been long in labour of her first child, and was obliged to diminish the head before I could deliver. I was called sooner when she was in labour of her second; and although the head presented, I tried to save this child, by bringing it footling. The body passed with difficulty, from the projection of the last vertebra of the loins, with the os sacrum. After I had brought down the body, I endeavoured, before the arms came down, to move along the head, first by pressing down the shoulders as she lay in the supine position; then I attempted to bring down the forehead, by pushing upwards: finding, however, that the forehead rested against the distorted part, I tried with my fingers to press it to the side; but, the arms filling up the parts at the sides of the pelvis, by the brim, I was obliged to bring down both arms, in order to obtain more room. After having pushed the forehead to the right side, which seemed to be the widest, I introduced my fingers into the mouth, and began, as in the former case, to pull in a cautious manner; but finding it did not move downwards, I exerted more and more force, till I found the neck giving way, and it was impossible to save the child. I was then obliged to introduce the curved crotchet, which was the first time that I had occasion to use it in such cases, since altered from the straight; and found it particularly useful on this occasion; for, instead of fixing on the side of the head, it went up to the sagittal suture, which it tore open, and making a large aperture, it had a firm hold on the bones of the forehead; by these means the cerebrum was sooner evacuated, the head collapsed, and was easily delivered.

"I was called again in her third labour; and, as the head

presented, proceeded in the delivery with all the precautions mentioned in lingering or laborious cases, till she was almost exhausted; but after all, was at last obliged to deliver as in her first labour.

"The children were all large. In her fourth pregnancy, she was luckily taken, in the seventh month, in labour, in consequence of a looseness and super-purgation, occasioned by eating too much fruit. This child, though the head passed with difficulty, was delivered alive."

CASE XIII. and a Supplement to CASE I.—Dr. Smellie was sent for by an accoucheur in London, to a young woman in labour of her first child. The latter had been called about two or three in the morning, and found a leg of the child presenting; but when he tried to bring down the body of the child, he found that it was large, and the pelvis narrow. He sent immediately for another practitioner, who brought down the body, but could not deliver the head; neither did they choose to use great force, for fear of separating the body.

"I arrived," says the doctor, "about eight o'clock, and was glad when I found there was no flooding, and that the woman was strong, and no way sunk or worn out with the labour.

"I had her laid across the bed, her breech a little over the side, and two of the gentlemen supported her legs; one of them also supported her body, till I introduced my right hand into the vagina.

"I found the face lay backwards a little to the left side of the pelvis. I felt the lower vertebra of the loins and upper part of the os sacrum jet in so much, that it was impossible to deliver the head without diminishing its bulk. As we were certain, from the umbilical chord, that the child was dead, it was in vain to fatigue the woman and ourselves, by attempting to bring it away entire.

"I pushed up the ends of my fingers, that were already in the vagina, past the os internum, but with difficulty, it being strongly contracted round the lower part of the head; and by the largeness of the head, and narrowness of the pelvis, they were very much squeezed. I endeavoured to raise the head higher, to make more room, but could not, although I used a good deal of force. Then taking the handle of the crotchet in my left hand, I introduced it with the point next the child's head; but at first trial could not get it to pass my fingers. I withdrew them to make more room; but the os internum contracted again so close to the head, that I could not get the end of the crotchet to pass. I again tried to force up the head with all my strength, and with great difficulty raised it a little higher; a circumstance which, affording more room, the crotchet passed the os internum, but not without bruising my fingers; and the point slipped a little to one side: this I again turned

to the head. As I withdrew my fingers, the point slipped up easier, and I felt it slide along to the crown of the head.

"I then brought down my right hand, and taking hold of the handle of the crotchet, used the same precautions as mentioned in Case II., and delivered in the same manner, by fixing the point firmly, and turning the curved part of the crotchet over the forehead.

"By pulling, the head was opened in the same manner, and delivered, but not without a great deal of force: the external parts of the woman were much swelled, but she was not torn."

CASE XIII.—In the medical essays of Edinburgh (Vol. IV. Art. 33) we find the following account of coagulated blood extravasated upon the uterus, with extraordinary thickness of the womb in a laborious birth, related by Mr. John Paisley, surgeon in Glasgow.

"Authors having differed," says he, "as to the thickness or thinness of the uterus of a woman with child; some with Mauriceau and Dionis, asserting that it grows always thinner as it extends, whilst others, I may say almost all anatomists, affirm, that it turns thicker as the woman advances in her pregnancy, and draws nearer to the time of her labour: or, to speak more properly, that in the several stages, the thickness of the sides of the womb keeps the same proportion to its cavity as in a natural state, the sinuses and vessels being proportionably enlarged as the uterus is extended. I say, this having occasioned some disputes among anatomists, I thought proper to send you the following history of a woman who died in child-labour, where I had an opportunity of examining the thickness of it, and at the same time, of discovering a fatal mistake in the midwife who attended her, who, by delaying to call for assistance in due time, was the unhappy occasion of the death both of mother and child.

"Upon the 19th day of June, I was called to a woman in labour, about middle age, of a low stature, and pretty fat, who had born several children; and I found her in an exceedingly low condition, with cold sweats, and severe faintings, her extremities cold, without any pulse, and unable to utter one word, though she shewed some signs of being desirous to speak with me. The midwife that attended her had gone off upon my being sent for, and left a young practitioner whom she was training up in that business, who gave me the following account of the poor woman's case; viz. That she had been several days in labour; and that all along the midwife imagined affairs were in a very good way, and the child, as she thought, in a very right posture, though after the waters broke, the child's head had never advanced by the strongest pains. Hence the midwife either blamed the woman for not bearing down strong enough when the pains came upon her, or else pretended that the pains were too faint and languid; and as there was no

flooding, ſhe never apprehended any danger, and therefore cheered up the mother and friends with the hopes of a good iſſue by a little patience; and as ſhe had a good deal of other buſineſs upon her hands, ſhe frequently left the poor woman for half a day together, and upon her return ſtill found all things in the ſame ſituation ſhe left them in.

"From the firſt day the woman was taken with her pains, ſhe ſcarcely made one drop of water; wherefore, on the fifth, the midwife ſuſpecting that to be the cauſe of the birth's being retarded, ſent to an apothecary's ſhop for a ſtrong ſtimulating diuretic mixture, to increaſe her pains and provoke urine, being aſſured all things were right, only the pains were too faint, as no doubt they were, when the woman had been ſo long fatigued with her labour. This having no effect, a ſtronger one was called for, which proved likewiſe unſucceſsful, and all things continued in the ſame ſtate, only that the woman's ſtrength was continually decaying, till the ſixth day at midnight, when I was ſent for, and found her in the ſituation above mentioned. It is evident, that when matters were brought to this paſs, the poor woman had not ſo much ſtrength left her as to bear the fatigue of being put into a poſture for being delivered, and that it was impoſſible to afford her relief. I acquainted the friends with it, aſſuring them that it would be madneſs to attempt it in theſe circumſtances, being perſuaded ſhe could not live above a quarter of an hour, which accordingly happened, ſhe dying in a few minutes. Next day I prevailed with the friends to have her opened, and after I had cut the teguments, and laid them back, I was ſurpriſed to meet with a black membranous body, like coagulated blood (which it in reality was), covering all the fore part of the uterus, though diſtended ſo much with the child. This I eaſily ſeparated in one cake from the uterus, and when it was ſpread upon the table, it was about a foot and a quarter long, and a foot wide, and a quarter of an inch thick. Whether this proceeded from the oozing out of blood from the ſubſtance of the uterus, by the ſtrong preſſure when the pains were violent, or from the rupture of ſome ſmall veſſels, either of the uterus, or ſome other part of the abdomen, I do not determine; for I could not obſerve the leaſt appearance of any ruptured veſſels in either, after the moſt accurate ſearch I could make, nor was there one drop of blood in any other part of the cavity of the abdomen. I know not if this is a thing that is always obſerved in ſuch caſes, having had no opportunity, before that time, or ſince, to examine any ſuch ſubject; though no doubt it is a thing may readily happen in very laborious births; and then it is no wonder if violent after-pains, fever, inflammations, and their conſequences, follow; for in ſuch a ſtate of body as women in theſe circumſtances are generally allowed to be in, it is ſcarcely to be ſuppoſed that coagulated blood can eaſily be diſſolved, and again abſorbed by the veſſels, in ſo large a cavity

as that of the abdomen; wherefore by its ftagnation and putrefaction it may bring on a train of bad fymptoms; the caufe of which lying entirely out of the phyfician's power to know, it need be no furprife though he fail in his attempt to remove them: and I do not know but this may be one of the chief caufes of thofe many diforders and frequent deaths that happen after very violent and laborious births; though there are many other caufes well enough known, which are capable of producing fuch-like effects.

"This phenomenon being what had never occurred to me either in reading or practice, I thought it would not be unufeful to acquaint the world therewith, to prompt thofe of greater abilities, or who have more leifure and more opportunities of meeting with proper objects, to enquire if fuch a cafe often happens; how far the caufes hinted are juft, or what other caufes may probably be affigned for it; what fign it may be difcovered by; what method of cure might be proper in fuch a cafe; and the like.

"When I had removed this coagulated blood, I obferved a large fac or bag full of water lying along the fides of the uterus, above the inteftines, and reaching as high as the kidney of the right fide. Upon feeling it all round with my hands, I found it was loofe at its fuperior part, and appeared to come out from the pubis, where only it had an attachment. This, upon examination, proved to be the urinary bladder, thus diftended to a vaft bignefs, and thruft to one fide by the preffure of the uterus on the fore part of the abdomen. I opened it, and meafured the urine it contained, no lefs than eight Englifh pints, or a Scotch quart. The uterus was pretty clofely contracted on the child; and in opening it from the fundus to the cervix, I found it at leaft half an inch thick in the thinneft part, though a good deal more at its fundus, where I obferved the finuffes fo large, as eafily to admit the end of my little finger into them. The placenta adhered to the fore part of the fundus. The waters having been broken fo long before, I could not expect to find the allantois.

"The child had fallen down into the paffage, much in the natural way, only with its head a little obliquely to one fide, fo that part of the frontal and parietal bones of the right fide refted upon the pubis and neck of the bladder; and by the violence of the pains, thefe bones had been pufhed fo ftrongly againft the pubis, as to make a confiderable indentation in them, and raifed an inflammation for an inch or two round the contufed part.*

"I believe I need fcarcely add, that if affiftance had been called in time, the fwelling of the bladder might have been prevented, by drawing off the urine with the catheter; and if the child's head could not be eafily ftirred, then the child might have been turned, and brought away by the feet, as is ufual in fuch cafes.

"Hence midwives ought to be advifed to call for affiftance in due time, efpecially in a cafe of this nature, where both the mo-

ther and child's life are in so great danger, though there be no flooding, since it is one of the most difficult cases that can well happen in midwifery; and thereby they may save two lives, and secure their own reputation. Hence, also, physicians and surgeons may take warning, not to trust too much to the report of midwives, who too often pretend all things are in a fair way, and that there wants only some medicine to promote the pains, which they suppose are too faint and languid, because the head does not fall any lower; while it may be owing to the above cause, as well as others mentioned by practical writers, when the giving of such medicines may be of the worst consequence."

Case XIV. and supplement to Case V.—The membranes had been broken, and the waters were all gone, before Dr. Smellie was called. The midwife told him the breech presented. Another gentleman had been called, but he being afraid it would turn out a difficult labour, left her.

"When I examined the woman," says the doctor, "I at first imagined a leg and a hip presented; but on pulling the supposed leg, which was lying in the vagina, I found it an arm, and very much swelled. It appeared very plain to me, that the midwife had pulled very strongly at the arm, because it was swelled, and the ends of the bones at the shoulder and elbow were stretched to a considerable distance. She had, after her fruitless endeavours to extract the child, doubled up the arm into the vagina. When I told her it was the arm, she said she had felt the fingers lying, as she imagined, with the leg. However, as it was my business to deliver the woman, I said no more.

"I laid her supine, across the bed; two women supported her legs and thighs; her nates were raised, and brought a little over. I first tried to introduce my right hand betwixt the arm and the os sacrum, but could not pass it into the uterus, from the bulk of the arm, and the projection of the upper part of the os sacrum, with the lower vertebra of the loins: it was the left arm that was down; the left shoulder was pushed in at the brim; the fore parts of the child were towards the belly and left side of the woman.

"Finding, after repeated trials, that I could not get up my hand, and that there was more room at the sides of the pelvis, I turned her to her left side. I renewed my endeavours; but the pelvis being narrow, and the arm of the child so much swelled, I was obliged to desist, and to proceed with caution, and by degrees, lest I should lose the strength of my arms, by working too much, and too long at a time. I next tried to push up the arm into the uterus; but the contraction of this last was so great, that it was in vain to attempt that method.

"As the woman had no flooding, and her pulse was strong, I rested a few minutes, during which I considered, as it was very probable that the child was dead, or would soon die, from the

arm's being ſo much ſwelled, and overſtrained at the joints; as the meconium, according to the midwife, had for four or five hours been coming down alſo; and as the pelvis was extremely narrow, it was ten to one that I could not deliver the head without the help of the crotchet. All theſe circumſtances made me think it more adviſable to ſeparate the arm at the ſhoulder from the body.

" To do this with greater eaſe, I pulled down the arm with a good deal of force, introduced my hand below it, into the vagina, and my finger up to the ſhoulder; but my fingers were ſo ſqueezed betwixt that and the projection of the foreſaid bones, that I could not divide it with the ſciſſars; and in my attempts to puſh up my hand, I found that the fore-arm obſtructed me moſt. I then ſeparated this at the elbow. After having reſted a minute or two, I again tried to puſh up the arm and ſhoulder; the arm I folded up, and the ſhoulder gave way a little: but by this time my own right arm was a little weakened, and my hand being cramped, and a little bruiſed on the back part, from the projection of the bones, I again turned her on her back, afterwards on her right ſide, and tried with my left hand; but that was in a little time more diſabled than the other.

" Once more I turned her to her left ſide, and reſted about five or ſix minutes. I now found that a flooding was begun, ſo that there was no time to be loſt. I introduced my right hand into the vagina; but the bones backwards ſtill hindered my hand. After turning her a little more towards her belly, I got again the arm folded up to the ſhoulder, and both raiſed ſo high, as to paſs my hand up to the fundus uteri. The muſcles of the thick part of my arm were ſo much preſſed, that if I had not got one of the feet very readily, I muſt have withdrawn it again. Graſping the heel and fore part of the foot between my fore and middle fingers, I brought it into the vagina. I then reſted a little, and by degrees fixed a nooſe upon it. I really thought, in the middle of this laſt effort, I muſt have given up this method, and have tried to introduce the crotchet, to fix it on the breaſt or ribs, and by that means tear down the body of the child into the vagina. The feet being brought down eaſily by the nooſe, I introduced my right hand, and raiſed the ſhoulder and head ſo much, that by pulling the nooſe with my other hand, on the outſide, I brought the breech down to the brim of the pelvis. After another intermiſſion of a few minutes, I took hold of the leg, being the right, with my left hand, and introduced two fingers of my other to the outſide of the left groin; but, after ſeveral trials, could not get that hip to advance. I then introduced the crook of the handle of the blunt hook to the outſide of the groin. Feeling that the blunt point was paſt in between the thighs, I wrapped one cloth round the crotchet, and another round the right leg, and pulling

both with a great force, brought down the body and ſhoulders without the os externum.

"The weather was remarkably cold for the ſeaſon of the year; there was very little fire; and yet I ſweated ſo much, that I was obliged to throw off my waiſtcoat and wig, and put on my night-gown, with a thin napkin on my head. I then endeavoured to deliver the head, by introducing the fore and middle fingers of my right hand into the child's mouth, which was to the back-part, and left ſide of the pelvis, but could not move it. I now brought down both the arms of the child, and introduced my right hand into the vagina, and the points of my fingers paſſed the os internum, along the face of the child. In the mean time I cauſed one of the women to hold up the body of the child, to give me more room to work. I introduced a curved crotchet, which had a thick wooden handle, with my left, the point to the child's face, and up along to the crown of the head. It fixed upon the head; but finding the point a little on one ſide, I moved it into the middle, by turning the point, and keeping the handle back to the perinæum, and the upper end, in an imaginary line to the middle ſpace betwixt the navel and the ſcorbiculus cordis of the woman. When this was done, I brought down my right hand, and with it took hold of the crotchet: I laid the body of the child on my right arm; I placed two fingers of my left hand on each ſide of the child's neck, and over the ſhoulders; and began to pull with both hands, ſlowly at firſt, till I found that the point of the crotchet had a firm hold in the head. I increaſed the force of pulling the crotchet, and found that it came down about two or three inches, without moving the head. Apprehenſive that the point had not entered the ſkull, but only torn down the hairy ſcalp, I raiſed it up to the former place, and renewed my effort. It came down as before, but held faſt above the forehead. I then reſted, and afterwards began to pull both the crotchet and body of the child with greater force. I found ſome of the cerebrum coming out, and the head moving a little lower. I continued to reſt and pull by turns, until the head leſſened, and was ſqueezed by degrees into a ſmaller bulk. After it had paſſed through the narrow part of the brim, it was delivered with great eaſe. The placenta being already looſened from the uterus, was immediately forced into the vagina. I took hold of the umbilical chord with one hand, and the edge of the placenta with the fingers of the other, by which means it was ſoon extracted. The uterus ſoon contracted into a ſmall bulk. I examined with my fingers the perinæum, and found that it was not in the leaſt cracked or torn. The woman bore all theſe endeavours with great courage; her pulſe continued good and ſtrong; the diſcharge of blood was not great, and did rather ſervice, for the parts were lubricated and relaxed by it.

"When I examined the child, I found the curvature of the crotchet had allowed the point to go over the forehead, to near the turn of the hair at the crown, and it had torn open all along the sagittal suture, through the fontanel, and fixed on the thick part of the skull at the forehead, which a straight crotchet could not so easily have done. The opening was about three inches long, and about a third or fourth part of the brain was evacuated. I ordered the woman to be kept quiet, and to drink frequently of warm caudle. I called two days after, and found her pulse strong, quick, and hard, with pains in her back, belly, and head, and a difficulty of breathing; she had got but little rest, and had sweated none: she told me that neither she, nor any of her sisters, could sweat or bear sweating: the discharges had gone on very well, but were abated more than usual that day. I advised that she should immediately lose twelve ounces of blood from her arm, and drink plentifully of barley water, or water gruel. The nurse had given her very little drink. She was soon relieved, and recovered much better than I expected. She was a little woman, and, as I could judge by the difficulty of my hand passing, it was not above three inches and a half, or three quarters, from the upper part of the os sacrum to the pubis. If I had not rested a great many times, and proceeded with caution and deliberation, I should have failed in turning the child; and if I had pulled with too great violence at the body, I should have separated it from the head, which it was very difficult to open and extract in so narrow a pelvis."

Case XV. and supplement to Case V.—Mr. Mudge of Plymouth was sent for about eight in the morning, to a woman who had been in labour all night, and the membranes were broken about eight hours. Her pulse was tolerably strong, though very quick, and her countenance very florid; circumstances owing to her drinking plentifully of spirituous liquors.

On examining, he found most part of the left arm hanging out of the passage, together with the cord, which was cold, flabby, and without the least pulsation. The head, as he imagined, was sunk down considerably, insomuch that he thought nature might be sufficient to push it forwards. He therefore left her, and prescribed some medicines to amuse. He called about eleven, and found no alteration, except that the pulse was so much sunk, that he determined to deliver. Having introduced his hand, and moved it round what he thought the head, which felt loose, and exactly filled up the pelvis, he fixed the forceps with as much advantage and ease as he had done in former cases; but the instrument slipping two or three times, he desisted, and tried to turn, and bring the child by the feet. However, the passage being filled up, he was obliged to twist, and pull off, the arm from the shoulder.

He then, with great difficulty, pushed his hand into the uterus, and found that it was the upper and back part of the shoulder, as far as the spine, which had been pushed down, exactly moulded to the shape of the pelvis. This he all along had taken for the head, which was now found lying above the right side of the pubis, the feet being at the very fundus uteri.

With great difficulty he brought down the right leg, and by pulling at it, and pushing up the shoulder at the same time, he soon extracted the child.

The labour lasted about twelve minutes, and the child was quite putrid *.

CASE XVI. and supplement to CASE X.—" The woman was in labour of her first child; eight months gone, and the child's arm presented. She was attacked with a flooding; and had been in labour severalhours. The membranes were broken, the hemorrhage was a little abated; and the arm pushed down into the vagina. The os internum was open about one inch and a half, or the circumference of half a crown, and felt no thicker at the edge than a piece of thick parchment.

" Having caused her to be laid in a supine position, I by degrees introduced my hand into the vagina; and afterwards my fingers into the os internum. This I endeavoured gently to stretch, by pushing up my fingers in form of a cone; but to my surprise found it so rigid, that it would not dilate in the least.

" I then used greater force, and repeated it several times by using one hand till it was fatigued and cramped, and then the other; but all to no purpose.

" Having failed in all these attempts, and recollecting from the former experience of a few cases, that by such force the os internum had been torn, and the women recovered even when the os internum was much thicker, I thought it adviſable to introduce the sciffars, and snip the edge of it. This operation being performed, it gave way so as to allow my hand to pass into the uterus. I then turned the child, and delivered it by the feet, which were much mortified, the child having been dead at least a fortnight. The woman seemed in a way of recovery; but complained of pain and soreness. About the fourth day she was taken with violent pains in the head and a quick pulse; but bleeding in the arm relieved her: on the fifth day after venæsection, she was seized on a sudden with a violent looseness, which weakened her much; but it was restrained by anodyne and cordial medicines: the fever recurred, and she was again blooded on the sixth; but the looseness returned on the seventh, which sunk her so that she immediately expired."

* The sequel of this case appears under " *Obstructed Lochia*," Case II.

"This was the ſecond time that I had ſnipped the os internum when I could not ſtretch it, ſuppoſing that as it was ſo thin the dilatation could have no bad effect. Although I did not ſucceed in Caſe X. under this head, I attributed the death of the patient in that caſe to her great weakneſs from her being exhauſted before delivery by the hemorrhage; but I hoped as this woman was ſtronger, the ſame method would have ſucceeded; eſpecially as the child muſt in this caſe be brought footling. I ſay, I had found it tear conſiderably, and the woman recover; but I afterwards reflected, that as the patient had not flooded much, I ought to have waited longer to allow the pains to puſh down the ſhoulders, and dilate the parts more. No doubt the violent force uſed firſt to dilate, and then the further dilatation, when I introduced my hand, might bring on the inflammation, pain, and fever, which ended in a looſeneſs.

"It is amongſt the moſt difficult things in midwifery to know in floodings, eſpecially if the child preſents wrong, when there are labour pains, how long to delay the delivery: becauſe if we deliver ſoon, and the woman dies, we are ready to reflect, that it would have been ſafer to leave it to the labour to ſtretch the parts; and when we delay too long, and the woman is too much weakened with the flooding, we are apt to think it would have been ſafer to have delivered ſooner.

"We find, in caſes where the child preſents fair, that the flooding commonly diminiſhes, or ſtops, on the breaking of the membranes in labour, and then the head is forced down, and the woman is for the moſt part ſafely delivered; but here the wrong poſition prevents the delivery, and although the violence of the flooding is abated on the waters' coming off, yet as there is a draining, this being long continued, ſinks the patient. This fatal caſe is inſerted as another caution to young practitioners."

Case XVII. and ſupplement to Case. V.—Mr. Mudge, of Plymouth, was called to a very little woman much deformed. She had been in labour two days: the waters had been diſcharged ſeven hours: her pulſe was extremely low, and ſunk, occaſioned by a pretty large flooding.

He found the right arm in the vagina, together with the cord, the pulſation of which aſſured him of the child's being alive. He, after great fatigue, brought down the legs and body. Then he tried to deliver the head, at firſt with great caution, to ſave the child; but the pelvis being ſo very narrow, that the head was as immoveable as a rock, he increaſed the force, and underwent a greater fatigue than he could deſcribe.

He endeavoured to introduce the crotchet, and fix it on the upper part of the head; but his ſtrength being ſo much exhauſted, and the pelvis ſo narrow, he could not raiſe it high enough, but fixed it on the under jaw, and finiſhed the delivery by means o

his utmost force. The labour lasted about twenty-five minutes. The mother was perfectly well in a week.

CASE XVIII. and a supplement to CASE IX.—"The woman had been in labour several hours before the membranes broke. Mrs. Simpson, a midwife, whom I had taught, and kept on purpose to attend all the labours with the pupils in the teaching way, was first called. She had assembled about ten of the gentlemen. Before the membranes broke, they could scarcely feel any part of the child.

"Being called, I examined, and could feel some part of the child resting above the os pubis; but could not distinguish it to be the head. When the membranes broke, it came a little lower; but as it felt unequal, and not like the round and hard touch of the head, and still kept high, although she had strong pains, I thought it was more advisable not to wait any longer, especially as the woman herself told me, that in her former labour, which was her first, a gentleman was called, and was obliged to bring the child away piece-meal.

"I then had her brought to the foot of the bed, as there was more room than at the sides: two of the pupils supported her legs. I kneeled, and at every pain introduced my right hand in form of a cone, by little and little, into the vagina. I then found it was the face and neck with the chin to the left side of the pelvis: I also perceived the bones projecting inwards, where the lower vertebræ of the loins join the os sacrum, and forming an acute angle, which was the occasion of the head's not coming down lower; but although I found the pelvis narrow, yet the head felt but small; and as it was too high for the forceps, there was a probability of saving the child by turning it, and bringing it footling. The face filled the upper part of the pelvis so exactly that some of the waters were still kept up in the uterus, so that when I pushed up the head, it was with great ease raised to the fundus uteri. By pushing it up quickly, the thick part of my arm filled the os externum and vagina; so that the remaining waters were kept up, till I got the child turned with the breech and legs to the lower part. These I easily delivered, and expected also to have safely extracted the head, as the pelvis was narrow. I brought the chin a little to the left side, introduced two of the fingers of my right hand, into the mouth of the child; and with my left held the body. I began at first to pull with a small force; but as the head did not advance, was obliged to increase it more and more, though to no purpose. I rested and pulled again with all my strength, till the fingers of my right hand began to fail; then I changed hands, but without effect. I rested and changed hands again, and continued to pull till I found the neck and jaw begin to give way. As it was now to no purpose to try any longer, because the child could not be brought alive, I extracted

it with the crotchet in the ſame manner, as deſcribed in the former caſes. The fore and middle fingers of my right hand, were ſo overſtrained by the great force of pulling in the mouth, that they ſwelled at the joints next to the back of my hand for ſeveral days, ſo that I could ſcarcely move them. Next day, the joints at my elbows and ſhoulders were ſwelled alſo. The woman recovered."

Case XIX. and ſupplement to Case XI.—" The woman had been beaten and kicked on the private parts three weeks before, ſo as to occaſion a large ſwelling on the labia pudendi. She had not felt the child ſtir for fourteen or ſixteen days. Some of the gentlemen that attended me, had been called two or three times ſome days before the delivery; but found it was not right labour. She was blooded and a poultice applied to the ſwelling, which relieved her, ſo that it was quite gone before ſhe fell in labour. She was weak and low, having eaten or drank little ſince the time ſhe had received the bruiſes on her body, which had rendered her incapable of begging about the ſtreets as formerly.

" When I examined, I found the os internum pretty much dilated, the membranes felt very thick. She had been ſeveral hours in labour; but as ſhe was weak, the pains did not force them down into the vagina. She was very big. I felt with difficulty the child's head, which lay above, and over the os pubis, and below that a great quantity of waters.

" I waited from ten or eleven, till ſeven in the evening; but there was not the leaſt alteration in the parts. As the woman was weak, and I ſuſpected that the child was dead, from the head's being kept up ſo high, occaſioned by the belly's being much ſwelled and expanded, and tumefied with air, which made it ſpecifically lighter than the waters, I reſolved to try to deliver her, eſpecially as ſhe had formerly two children, and according to her account the labours were not lingering: but ſuſpecting there might be difficulty, I waited till all the gentlemen that attended me were convened. I had the woman laid ſupine acroſs the bed, her legs ſupported by the two eldeſt pupils. At firſt I deſigned to have broken the membranes, that the head might be forced down, when the waters were evacuated, and the uterus contracted; but finding the membranes high up, and rigid, and that the os externum dilated with a ſmall force, I altered my deſign, and introducing my right hand into the vagina, paſſed it up through the os internum, into the uterus.

Having broken the membranes, I paſſed my hand within them, and found the child floating in a large quantity of waters, which were kept up by my arm locking up the os externum. I then felt, and told the gentlemen that the belly of the fœtus was largely ſwelled, and that I was then turning up the head to the fundus, to bring down the breech and legs to the lower part of the uterus, at the ſame time placing the face and fore parts of the

child towards the back of the mother. When I brought down the feet of the child, the waters contained in the uterus iſſued out with great force along my arm to the quantity of three or four quarts. I then brought the legs without the os externum, and the ſcarf-ſkin ſtripped all off. After wrapping a cloth round them, I endeavoured to bring along the thighs and breech; but could not move them further. I pulled with greater force, but found the legs were likely to ſeparate from the thighs. I then introduced the fingers of my left hand along the back part of the pelvis, and found the bigneſs of the belly was the principal obſtacle. With my right I introduced the ſciſſars, and pierced it with the points, on which a good deal of rarefied air, and waters, were diſcharged. After dilating the points to enlarge the opening, I brought them down, and introduced the fingers of my left hand into the aperture; with theſe I got a firm hold over the os pubis of the fœtus, and within the abdomen. By pulling at this, and with my right hand at the legs, the breech was brought without the os externum; but then I found it was ſeparating at the vertebræ of the loins, from the body of the child. I then reſted a minute or two, and introduced the fingers of my left hand up to the breaſt of the child. With my right I paſſed up the point of the crotchet, and fixing it there, tore open the breaſt and ribs; but in pulling at the crotchet with my right, and at the breech with my left, the laſt was pulled from the upper part of the body. I found on tearing open the breaſt, that a large quantity of water and blood were evacuated. The hold of the crotchet giving way, I tried to fix it higher; but every part tore ſo eaſy, that I could not bring down the body. I then was obliged to take out the crotchet and reſt a little, for my hands and arms began to be cramped and enervated. After recovering a little from the fatigue, I introduced my right hand into the uterus, and tracing up to the ſhoulders, brought down one of the arms.

"I attempted to fix a nooſe over the wriſt, but it was ſo ſlippery and the body ſo high, that I could not get within the os externum. I again introduced my hand, and was for a little while at a loſs how to proceed to deliver the body and head to the beſt advantage, becauſe every part tore ſo ſoon where I fixed the crotchet. Without bringing down the body, I tried to puſh it up and bring in the head: but this laſt was ſo large and ſlippery, that I could not turn it down ſo as to get the hind, or upper part, to preſent.

"Being again fatigued by theſe fruitleſs endeavours, I was obliged to intermit, I then reſolved to fix the crotchet; for which end I introduced my left hand up to the ſhoulders, and with my right got the point fixed ſo firm above one of them and the clavicle, that it did not give way, but brought it down into the pelvis, and without the os externum. I pulled ſlowly and with

caution, left a separation should happen at the neck, and then it would have been more difficult to deliver the head.

"After I had got the shoulders without the os externum, I again rested that my strength should not be too much exhausted. I introduced two of my fingers of the right hand into the child's mouth, which was a little to the left side of the os sacrum, and above the brim of the pelvis, and with my left hand, I pulled at the shoulders which were wrapped in a cloth. Finding the head did not move, and that both the under jaw and neck were giving way, I again desisted. I now introduced the fingers of my right hand up to the face and forehead, and with my left passed the crotchet up betwixt them, till I could find the point above the crown of the head. Having brought down my right, I then took hold of the handle of the crotchet with it, and the shoulders with my left. I tried several times if the crotchet had a firm hold, and gradually increased the force of pulling, by which means I brought the head down into the pelvis, and luckily delivered it. The crotchet had fixed near to the crown of the head, and had torn open the skull, from that part through the fontanel to the bones of the forehead. At this large opening, the brain was squeezed out, the head collapsed, and came down with greater ease. I was afterwards obliged, with a good deal of trouble, to separate the placenta which adhered firmly to the fore part of the uterus; but could not effect the separation till I turned her on her left side. One thing was remarkable, and assisted me much, at least it prevented a greater fatigue. Every time I introduced my hand into the uterus, I found it still kept from contracting on the child, by some waters that remained; for although a vast quantity came off at first, yet when I brought down my hand, the parts of the child pressed so close down, that there was still some detained. My greatest fatigue was occasioned by my being obliged so often to pull down and push up my hands; as well as by the slipping of the body and crotchet. If I had taken the first method I designed to follow, the difficulty I believe would have been much the same; for, as the woman was weak, the pains would not have forced the head into the pelvis, even after the membranes were broken, and the bulk of the waters evacuated. Besides, as the head was large, and the hairy scalp swelled, the forceps could not have brought it down. The only advantage would have been, after the head was opened, and extracted with the crotchet, that the shoulders could have been easier torn down with the instrument, than the belly, opened in the same manner; after which there would have been no danger, as in the other way, of leaving the head behind."

Case XX. and supplement to Case XII.—"A woman near her full time, of her second child, was taken with a discharge of blood from the uterus, which continued to drain for eight or ten

days. She was by misfortunes reduced to low circumstances, and had suckled her first child till within three weeks of this labour. It then died, and her grief, joined to the shock of a sudden surprise soon after, was perhaps the occasion of bringing on the flooding.

" When called to her, I found her pulse low and weak, though not frequent. She had no labour pains; but had been attacked with frequent vomitings, which had helped to dilate the os uteri. On examining, I found the head of the child presenting with the membranes and waters; the os uteri soft and pretty much dilated. As she had lost a great quantity of blood, and there was no prospect of right labour pains, I thought it safer for the woman and child, to deliver directly by turning, and bringing by the feet, especially, after she had told me, that she had been delivered easily of the first child. I had little difficulty in introducing my hand into the uterus, and as the membranes had not been broken, I easily pushed up the head, and brought along the legs and body. After I had turned the belly of the child to the mother's back, and a quarter more, I then brought down the legs, body, shoulders, and, arms. I now introduced a finger into the mouth, and expected, as she had an easy labour before, to have delivered the head with little difficulty; having tried every safe method, first to bring the forehead into the hollow of the os sacrum, by pulling the body both upwards and downwards, likewise from side to side; then endeavoured to move the face first to one side, then to the other; all my efforts proved ineffectual. I exerted great force, and continued to increase it till I found the neck and mouth begin to give way; I then declared that I could not possibly save the child. I introduced my left hand along the side of the child's head, until my fingers passed the os uteri, along which I introduced a curved crotchet with its point bearing close along the head to the upper part, and moved it backwards to bring the convex part over the forehead. This being done, I fixed the point into the upper part above the forehead; then pulled slowly to find if it had a sufficient hold. When I was certain of this, I pulled with greater force, and found the bones of the skull collapsing, and a quantity of waters came along: the forehead came easily down into the hollow of the os sacrum, and was delivered immediately without tearing the parts of the woman. The uterus contracted so strongly, that the placenta, with very little pulling at the funis, was pushed down into the vagina, and easily delivered. The flooding ceased immediately, and the woman bore the operation better than I expected.

" The child's head was about a third larger than common, and it was remarkable that the fontanel and sutures were no otherwise than in a sound head, the first no larger, and all the bones were close to one another. In general when the head is dropsical, the

bones are ſtretched from one another more or leſs, according to the quantity contained. Dr. Briſhan examined the head next day, and poured through a funnel no leſs than a quart or three pints of water at the opening, which had been made with the crotchet into the head. The whole cerebrum and cerebellum were found. The point of the crotchet was fixed at the ſide of the fontanel, which it had perforated. This aperture allowed the waters to diſcharge; the head to leſſen, and come along. The woman ſeemed to be in a good way for ſeveral days, during which the doctor attended her, and preſcribed ſome medicines to help her to reſt, and ſweat; but ſhe being miſmanaged and neglected by her nurſe, was thrown into a fever, and died about the eighteenth or twentieth day."

CASE XXI. and a Supplement to CASE XII.—A correſpondent of Dr. Smellie was called to a woman who had been in a lingering labour three or four days. Although ſhe had now and then fainting fits, yet her pulſe was regular and ſtrong: the head preſented fair, but very high; which made him reſolve to turn the child, and bring it by the feet: this required great force; and after the body and arms were delivered, he was obliged at laſt to exert great force in extracting the head with the crotchet. He ſays, he abundantly repented the attempting to turn and deliver footling, and wiſhed he had waited longer, as the woman did not ſeem to be in ſuch danger as to require an immediate delivery. He reflected, that by waiting perhaps he might have ſucceeded with the forceps, and if they had failed, and the woman been in danger, it would have been ſafer for her, eſpecially as the child was large, and the pelvis narrow, to have diminiſhed the bulk of the head, rather than run the riſk of her life, by ſo great force being uſed; for although ſhe did recover, it was with great difficulty, and what he did not expect.

CASE XXII.—This is a caſe much of the ſame kind: the child being delivered in the ſame manner as the foregoing, and related by the ſame gentleman. The woman had been in labour all the day before, and the waters had come off ſeveral hours before he was called. The head reſted over the os pubis; and the pains were almoſt entirely gone off. Having laid her on her ſide, and raiſed her hips higher than her ſhoulders, he eaſily introduced his hand into the uterus, and brought down the legs and body of the child; but after many repeated trials, and exerting great force, he could not deliver the head. Thus foiled, he was obliged to introduce the crotchet, which he fixed on the left parietal bone, near the ſagittal ſuture; and at laſt, not without ſome difficulty, delivered the head. The child was very large, and the pelvis narrow, from the projection of the upper part of the ſacrum, and the make of the bones at the ſymphiſis of the os pubis. The

placenta adhered to the fore part of the uterus. The woman recovered very well.

He anticipates Dr. Smellie's censure of him for conducting the operation after this manner, when he knew what sort of pelvis he had to deal with; as he could not tell but that the head was not only large, but also too much ossified, to yield to the passage. He was in hopes, however, by the cautions which he used, to deliver without the application of the crotchet, especially as he found he could turn the child with so great ease.

Case XXIII.—This is a third case from the same gentleman, of the like nature; the child being delivered also with the crotchet. He was sent for to a woman about midnight. The midwife acquainted him, that after the waters broke, though the pains were strong and forcing, the head did not advance, but rested on the os pubis; that she often endeavoured to disengage it, but to no purpose; she therefore tried to turn it, but failed in the attempt, and had brought down a hand, which, with the head, was firmly locked in the passage. Upon examination he found the child situated as above, and the pelvis very narrow, from the jetting in of the last lumbar vertebra, and the upper part of the sacrum.

Having properly placed her, he endeavoured to raise the head, but could not make it yield in the least: then he attempted to slip his hand on one side, for, though it was closely jammed between the os pubis and sacrum, there was room on each side of the pelvis, but neither could he succeed in this endeavour. He now caused the patient to be turned on her knees and elbows; and with much difficulty introduced his hand; but was several times obliged to withdraw it for ease, the great pressure cramping him so as to render him incapable of reaching the feet. In this situation he hardly knew how to act. The head was not only very high up, but did not present fair enough for the crotchet; and the contraction was so strong, he almost despaired of bringing down the feet. However, as he thought this the most probable way of relieving the patient, he once more attempted it, and after much difficulty so far succeeded as to bring down one foot, and fix the noose on it. He then brought down the other, and joining them together, extracted as far as to the chest, and reached the left arm; the right being engaged with the head gave him some trouble, and he snapped the humerus in extracting it; but this gave him less concern, as there was no pulsation in the funis. The arms being down, a principal difficulty (the head) still remained. He introduced a finger into the mouth, and had very nearly dislocated the neck; it was so fast locked that he could gain no ground. He therefore insinuated a crotchet, by which he delivered it, in a short time.

He left the poor woman without any hopes of her recovery. She indeed recruited a little about six or eight hours after, but died that day or the following.

The 21st and 22d cases were both badly conducted, and inserted by Dr. Smellie as a caution to others to wait with more patience.

CASE XXIV.—A practitioner of Sankey, in Lancashire, was sent for to Ashton, near Wigan, to Ann Marsh, called the little dwarf, about one yard nine inches in height, aged thirty-nine years. " The midwife told me," says he, " that she had been four days in labour of her first child, that the leg had been without the birth twelve hours, and the patient had now no pains. I found the heel towards the pubis, and the scrotum hanging out much swelled.

" After using a great deal of force, I raised the body of the child, which gave me more room to introduce my finger betwixt the thigh that was still up and the body. I at last, by taking time, and using all my strength, got the body delivered as far as the shoulders.

" Perceiving the cartilages of the sternum driven inwards by the jetting forward of the vertebræ of the mother's loins, I brought down the arms. I made an incision with the scissars, at the back part of the child's neck, to introduce the curved crotchet within the foramen magnum; but to no purpose: after this, I made another opening on the right side of the neck, separating the skin with my finger higher up than the ear, which formed a safe support to receive the point of the crotchet, and defendthe mother from being injured.

" Introducing the crotchet, I tore open the skull, and as the head lessened I delivered it, and the woman recovered."

Cases in which the Head was left either in the Vagina or Uterus, and where the Body was delivered.

CASE I.—" A midwife, who had never had any education, and who had formerly vaunted, that she always did her own work, and would never call in man to her assistance, was called to a case, in which the child presented wrong. After she had, with great difficulty, brought down the body, she could not deliver the head, from the woman's being of a small size, and the child large. During the time of her making these trials, the husband sent in great haste for me. In the mean time, when the midwife found that her endeavours were in vain, she rested to recover from her fatigue, and told those who were present, that she would now wait for the assistance of the woman's pains. One of the servants seeing me at a distance, went in in a hurry, and told her I was come. She not knowing that I was called, fell to work immediately, and pulled at the child with great force, and

violence. Finding, as ſhe imagined, the child coming along, ſhe called out that now ſhe had got the better of him. The neck at that inſtant ſeparating, the body was pulled from the head, and ſhe fell down on the floor. As ſhe attempted to riſe, one of the aſſiſtants told her that it wanted the head; a circumſtance that ſhocked her ſo much (being a woman of a violent diſpoſition), that ſhe was immediately ſeized with faintings and convulſions, and obliged to be put to bed in another room. I juſt then arrived, and was ſurpriſed to find the houſe in ſuch confuſion.

"After being informed of what had happened, I found that the woman's pulſe was pretty good, and that there had been no diſcharge of blood from the uterus, but what came now was only from the child's head, which, to my great joy, I found lying in the vagina and pelvis. I let her lie a little, to recover of the former fatigue; then examining more particularly, I found part of the ſkin of the neck without the os externum. After I had put her in a ſupine poſition, I introduced the fingers of my left hand, and found the mouth at the right ſide, and lower part of the ſacrum. Introducing two of my fingers into it, I tried with that hold to bring along the head; but finding that this would not be ſufficient, and being afraid that the under jaw would ſeparate, if I uſed greater force, I puſhed up my fingers farther, and along the face, and with my right hand introduced the crotchet to the upper part of the forehead. Here I fixed it, and again taking the former hold in the mouth with my fingers, by pulling with them and the crotchet, I delivered the head much eaſier than I expected. After having extracted the placenta, and put the woman into an eaſier poſition in bed, I went and recovered the midwife, by giving her ſome volatile ſpirits in water. The child appeared to have been dead ſeveral days; and I was perſuaded, that if the neck had not given way, but had ſtood another pull, the head had been delivered.

"This accident was lucky for me, and rendered the midwife more tractable for the future."

CASE II.—"The breech of the child preſented, with the thighs to the pubis, and the body was forced down with the labour pains; but the midwife not knowing how to turn the fore parts of the child to the back parts of the uterus, brought it along as it preſented. The child being pretty large, ſhe uſed a good deal of force to deliver the head, which not being ſufficient, ſhe fixed a cloth over the ſhoulders, and got one of the byſtanders to aſſiſt her, by pulling with greater force; by which the body was ſeparated from the head. In conſequence of this accident, I was immediately called. I found the greateſt part of the head ſtill above the pelvis. The midwife told me, ſhe was in hopes that the woman's pains would have delivered it before I came; but that now they had quite left her, and that a flooding was begun. The

woman's pulſe was a little ſunk. I examined the body, and found that the child had been dead at leaſt ten or twelve days; the ſcarf-ſkin was livid, and ſome of it ſtripped off; and the woman had not felt it move or ſtir during that time. After encouraging her, and giving her ſome warm wine and water, and putting her in a ſupine poſition, I introduced my right hand into the vagina, and raiſed the head above the brim of the pelvis; then turned it, and brought in the upper part of it to preſent, with the face backwards, and a little to the left ſide. This being effected, I ordered an aſſiſtant to preſs on the belly with both hands, to keep down the uterus and head in that poſition; then opening the head with the ſciſſars, I went up along the forehead and face, introduced the blunt hook with my other hand, and fixed the point in the mouth, which was now turned towards the fundus. I now withdrew my right hand, took hold of the handle of the blunt crotchet or hook, and introduced the fingers of my left hand into the opening. With theſe two holds I gradually brought down the head, and delivered it ſlowly, though with ſome difficulty. The placenta, which was partly ſeparated, followed ſoon after. The head, in this operation, ſlipped ſeveral times before I got it right turned, to preſent with the upper part. I alſo had ſome difficulty in keeping the head ſteady, ſo as to perforate the ſame with the ſciſſars, by which both my hands were pretty much cramped and wearied."

Case III. This was a caſe of the ſame kind as the former, but more difficult, from the parts being much ſwelled, and the pelvis a little diſtorted.

"The head was ſeparated much in the ſame manner as in the foregoing caſe, but the face was to the right ſide. The head was kept high up, from the pelvis being narrow, and the body was eaſier ſeparated, from being much mortified. I was not ſent for to this woman, till about twenty-four hours after the ſeparation, the midwife aſſuring them that the pains would be ſufficient to deliver the head; but the woman growing weaker, and there being a ſmall diſcharge of blood, which now began to increaſe, I was ſent for.

"As the external parts were pretty much ſwelled, I with difficulty introduced my hand into the vagina, and puſhing up the head, turned down the upper part, as in the former caſe; but the taſk was rendered much harder, from the narrowneſs of the pelvis, and the placenta's lying looſe at the back part of the uterus; this I was obliged to bring down before I could place the head in the right poſition. After I had opened the head, I could not fix the blunt hook, as in the former caſe; but got a pretty firm hold at the fore-part of the ear; and luckily the head not being very large, I brought it gradually lower, as the cerebrum evacuated, and at laſt delivered it. The point of the crotchet

ſlipped twice in pulling; but the third time I got a good hold in the outward corner of the left orbit of the eye."

CASE IV.—" The arm of the fœtus preſented. The midwife ſent for a gentleman in the neighbourhood, who practiſed midwifery. He was ſo fatigued by the time that he got the child turned, and the body delivered, that he was not able to extract the head. In this ſituation he called a medical gentleman, who tried ſeveral times to deliver the head, but to no purpoſe. He afterwards endeavoured to introduce the curved crotchet, and to fix it on the upper part of the child's head, but was prevented by the narrowneſs of the pelvis, which cramped and fatigued his hand ſo, that he was not able to fix it. After the other gentleman and he had tried this laſt method ſeveral times, and found the head lie ſo very high, that the ſhoulders prevented their going up ſufficiently with their hands to guide the inſtrument, they at laſt reſolved to ſeparate the body from the head; an operation which one of the gentlemen performed with an inciſion knife, at the lower part of the neck, betwixt the ſixth and ſeventh vertebræ. Again they attempted to fix the crotchet; when this did not ſucceed, they tried to puſh up the head, ſo as to turn down the vertex, and open it with the ſciſſars, and then to extract with the crotchet, as in the former caſes; but being both again fatigued, they were obliged to deſiſt, and ſent for me; and in the mean time deſired the woman might be kept quiet in bed.

" After having placed her in a ſupine poſition, I introduced my left hand into the vagina, then raiſed the head, ſo as to gain admiſſion into the uterus. In doing this, I found that the difficulty in the head's coming along proceeded from the pelvis being diſtorted; and that the upper part of the os ſacrum, and laſt vertebra of the loins jetted conſiderably forwards.

" Having found the mouth, I introduced a finger into it, and bringing it downwards, turned the forehead to the right ſide, at the brim of the pelvis; then tracing up with my fingers along the face and forehead of the child, while an aſſiſtant preſſed gently with both hands on the abdomen of the woman, I tried to introduce one of the curved crotchets; but finding that the pubis prevented me from inſinuating it far enough up in this poſition, I turned her to her left ſide, and again introduced my left hand in the ſame manner. Betwixt this and the child's head, I ſlipped up the crotchet with my right hand, having the head graſped in the uterus with my left, my fore and middle fingers being placed on the right parietal bone, near the vertex. I fixed the point of my crotchet into this part, and after I found that I had torn open the ſkull, and that the crotchet had a firm hold, I withdrew my hand. Fixing again my fore and middle fingers into the mouth, and my thumb below the chin, I began to pull with both hands, viz. at the under jaw with my left, and at the

crotchet with my right; but finding that it required a good deal of force, I pulled at first in a slow and cautious manner, that as the crotchet tore open the bones, I might allow time for the brain to evacuate, and the head to diminish in its bulk. I exerted the greatest force at the crotchet, and only a little at the under jaw, for fear of tearing it off, and losing that hold, which is of great advantage to keep the head steady. By increasing the force at intervals, the head began to advance lower and lower. When I had brought it down into the pelvis, I directed the assistants to lay the patient in the supine position; then I turned the forehead from the right ischium backwards to the concave, and lower part of the sacrum; and standing up, pulled the head upwards, in a semicircular manner, from below the pubis. One lucky circumstance attended this case; the woman had no flooding during the whole time, and endured all these efforts with great resolution. Finding that the placenta did not in a little time come down, I introduced my hand into the uterus, and found the part where the head was lodged still pretty open. At the upper part of it I perceived the middle of the uterus, contracted in form of an hour-glass, below the placenta, which adhered to the fundus. I insinuated the fingers of my right hand gradually into this contracted part, while at the same time I pressed my left hand on the abdomen, to keep down the uterus. After it was fully stretched, so as to allow my hand to pass, I gradually separated and extracted the placenta, which was adhering firmly to the uterus.

"When we examined the head, we found the crotchet had fixed on the right bregma, and had made an opening about two inches long, down towards the temple. In operating, I tried to fix it nearer the vertex, on the sagittal suture, but the head being slippery, and difficult to keep in a firm position, I was glad to fix it in that part. Indeed I imagined it was fixed higher, and the opening much larger, till the head was examined.

"The woman, although she was much exhausted by undergoing the fatigue of these several trials, yet in the end recovered much sooner and better than expectation.

"When I was called (as such cases happen but very seldom), I carried along with me a pair of the long forceps, bent to one side, Ammand's net, Leveret's tire-tête, and a pair of curved crotchets: but finding the difficulty proceeded from a narrow pelvis, and that the head must first be opened, and lessened in bulk, before it could pass, the curved crotchet seemed the most simple and effectual instrument. If this had failed, then it might have been proper to turn down, and open the vertex with the scissars, and extract the head with the crotchet. The curved kind seem better adapted for this purpose, than either the straight kind or blunt hook, to be used either with or without the sheath. Dr. Hunter was present, and assisted at this operation."

"This should be a caution to practitioners, never to separate the body from the head, but if possible to deliver without using that expedient; and to wait with patience (when the child cannot be saved) the efforts of the pains, especially if the woman is not in absolute danger; for the head is much easier delivered with the crotchet, when not separated from the body."

CASE V.—A country practitioner was called by a midwife, to a woman of a delicate and tender constitution. She had been a whole day in strong labour before the membranes broke; the pains after that abated, and in two days the head did not advance.

He found the os uteri fully open, and the forehead of the child towards the pubis. With great difficulty he turned the child, and brought down the legs and body; but in using all his force to deliver the head, both the jaw and neck gave way. Being much fatigued, and the uterus strongly contracted, he could not introduce his fingers to the head, so as to fix the crotchet. Having sent for Dr. Smellie's correspondent (who relates the case), he, after repeated trials, at last got his fingers into the orbit, where he fixed the crotchet, and delivered the head, which was large. The sutures were firm, and the pelvis was narrow. The patient seemed to be in a fair way of recovery for the next two days; but imprudently sitting up too long, and drinking heating liquors, she was attacked with a fever, and died the sixth day after delivery, without any complaint from the severity of the labour.

CASE VI.—A surgeon of Blandford was called to a case, in which the midwife had pulled the body of the child from the head, which was left in the uterus. This he immediately delivered, by fixing the curved crotchet on the head, and his fingers in the child's mouth.

In Gifford's cases of midwifery, Case 69th describes the head of a fœtus, six months old, left in the uterus, and delivered with the hand.

Monf. Lamotte (book iii. chap. 23.) has a case of the head's being left in the uterus, the body having been delivered, and torn from the head with great force. And in the last case of the supplement to his treatise, there is a case, in which another gentleman could not deliver the head, which was separated from the body, and left in the uterus. Nevertheless he went to bed, and the first news he heard in the morning was, that the head was delivered by the mere assistance of nature.

Dr. Smellie knew of a case, in which two gentlemen were fatigued a whole day in delivering a head, which was so slippery, that for a long time they were not able to open, or fix an instrument upon it. If they had had the instruments mentioned in Case IV. the operation would probably have been more easily performed.

We shall conclude Dr. Smellie's valuable series of cases of preternatural labour by observing, that the practice, in arm presentations, of twisting off the limb, is adopted by some of the most eminent accoucheurs in London. Testimonies in favour of it are given by Dr. Sims, and Dr. Clark of Dublin, in the Medical and Physical Journal.

On the subject of delivery in certain difficult cases of arm-presentation, Dr. Sims says:

"It has been considered as a general rule in the practice of Midwifery, that when the arm presents, except the head is at the same time descending into the pelvis, the child must be turned and brought by the feet; and for a long time it was supposed that a full-grown child, in such a situation, could never, by any effect of the labour pains, be expelled; but Dr. Denman first observed that there were exceptions to this, and that a child presenting with the arm, might, by the long-continued action of the uterus, be so turned about, that the breech should come down, and thus the delivery be completed without assistance from art. There is no doubt but that this spontaneous evolution has sometimes really taken place; experience has, however, shewn, that it is by no means to be depended upon, and the rule of the necessity of turning a child presenting with the arm is generally acted upon, and I believe with great propriety, in those cases where the practitioner is in attendance sufficiently early after the membranes have been ruptured, to allow of the operation of turning being performed with tolerable ease. But it sometimes happens that from neglect in the beginning*, the child is suffered to remain in this unfavourable position so long after the discharge of the liquor amnii, that the uterus contracts so strongly round the body of the child, that the operation of turning becomes extremely difficult and cannot be performed without using so much force as will not unfrequently prove even fatal to the mother. Every experienced practitioner knows that there are cases of this kind, in which the difficulty of turning is extreme; and although long-continued efforts, dexterously applied, will generally in the end succeed, yet the event is so often unfavourable, that these forcible deliveries are always to be dreaded; and the more experience a man has, the more he wishes to avoid the necessity of turning under these circumstances.

"It will be remembered that I am speaking only of such cases where this operation cannot be performed without great violence,

* It must be confessed, that although neglect in the beginning is the most usual cause of these difficult labours, it will sometimes happen, that from the rupture of the membranes before the commencement of labour, the ensuing difficulty must be in great measure unavoidable.

for it ſometimes happens, even when the waters have been very long diſcharged, that the uterus acts with ſo little force that the turning may be effected with tolerable eaſe and great ſafety to the patient.

"In the caſes I am ſpeaking of, the previous death of the child is for the moſt part certain, from the concomitant circumſtances; the practitioner has, therefore, nothing to conſider, but how he can bring it away with the leaſt pain and hazard to the mother. Many years ago, in a converſation with ſeveral experienced practitioners on this difficulty, I remember to have heard Dr. Garthſhore recommend the ſevering the head from the body of the child, which he repreſented as having eaſily performed with the aſſiſtance of the blunt-hook only; an operation mentioned by Heiſter, as newly invented in his time by one Horne, and long before by Celſus*. Dr. Denman, in his excellent Introduction to the Practice of Midwifery, ſpeaks of this mode of delivery; but not having had any experience of it himſelf, paſſes it over ſlightly. Soon after the above-mentioned converſation, I was called to a woman who had been ſeveral days in labour with an arm-preſentation. She had been from the firſt attended by a gentleman advanced in life, but of little experience in this branch of his profeſſion, having ſpent moſt of his time as a ſurgeon in the navy. Having been a pupil of Dr. William Hunter, he had imbibed a notion that nature, if unmoleſted, was in every caſe adequate to the delivery of the child; he had not of courſe, as he aſſured me, attempted to give any manual aſſiſtance. This caſe was therefore favourable for the ſpontaneous evolution to have taken place, but unfortunately nothing of the kind happened.

"When my aſſiſtance was demanded, I found the woman apparently dying, the arm and ſhoulder of the child entirely without the os externum, and the uterus ſo cloſely contracted round its body, that having no hopes of ſaving the life of the mother, any attempt at turning was entirely out of the queſtion; yet being deſirous of finiſhing the delivery, for the ſake of the women

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* *Heiſter, cap.* 153. *ſec.* 9. "Si vero tranſverſus eſt, neque dirigi potuit, uncus alæ injiciendus paulatimq; attrahendus eſt. Sub quo ferè cervix replicatur retroque caput ad reliquum corpus ſpectat. Remedio *cervix præciſa* ut ſeparatim utraq; pars auferatur. Id unco fit qui, priori ſimilis, in inferiori tantum parte per totam aciem exacuitur. Tum id agendum eſt, ut ante caput, deinde reliqua pars auferatur: quia fere majore parte extracta caput in vacuam vulvam prolabitur extrahique ſine ſummo periculo non poteſt." Celſus, lib. 7. c. 29.

This direction to take away the head firſt and afterwards the reſt of the body, is hardly practicable, and from what I have ſeen appears to be unneceſſary; the difficulty and danger of delivering the head, always indeed proportionable to the deformity of the bones of the pelvis, being greater in imagination than in reality.

in attendance and the relatives of the patient, who are greatly more ſhocked at a woman's dying undelivered, than under any other circumſtances, I thought it a good occaſion to put in practice the operation recommended by Dr. Garthſhore, and accordingly paſſed a blunt-hook round the neck of the child, which was ſo low down as to be eaſily got at, and pulled forcibly, twiſting at the ſame time with a view of ſeparating the head from the body; but although the child was very putrid, the neck reſiſted a very conſiderable force, ſufficient to extract the child double, as it was coming down, the head and thorax paſſing at the ſame time. Since this I have often been conſulted in caſes of arm-preſentation, where the waters had been long diſcharged, and the uterus in conſequence very cloſely contracted round the body of the child; in ſome of theſe caſes, long-continued efforts have at length ſucceeded in turning the child, but too frequently the event has been fatal, ſometimes the uterus has been ruptured in the operation, and ſometimes where this misfortune has not been known to have happened, the uterus has ſuffered ſo much that fever and death have enſued. The more experience I have had, the more I have been deſirous of rather bringing away the child in any way I could, than running the riſk of theſe very difficult turnings. Sometimes I have been able to get at the head, and with the perforator and crotchet have accompliſhed the delivery; ſometimes calling to mind the ſpontaneous evolution of Dr. Denman, I have ſucceeded in imitating it by fixing the crotchet in the anus or groin, and now and then pulling by the arm, to get the thorax as low down as poſſible; I have perforated this, and getting away piece-meal whatever part preſented, have divided the body in two parts; in this way awkwardly imitating Dr. Garthſhore's operation, or paſſing the crotchet through the thorax and abdomen, have fixed it in the bones of the pelvis, and thus brought the breech down.

"Having been lately called, in conſultation with my friend and colleague, Dr. Squire, in a caſe where the arm and navel-ſtring preſented, and the labour, under the management of a midwife, having been ſuffered to go on ſome days after the evacuation of the liquor amnii, the uterus was ſo firmly contracted round the body of the child, that turning could not but with the greateſt difficulty have been accompliſhed. The doctor having preciſely the ſame ideas of the danger of turning in this caſe from the reſiſtance the uterus gave to his firſt attempts, and the ſame experience of the greater ſafety of delivering by other means, we determined if poſſible to ſave the patient the danger of this operation; and having with ſome difficulty got at the neck of the child, we fixed a crotchet upon it, and guarding the point with the fingers on the oppoſite ſide of the neck, ſucceeded by degrees in ſeparating the head; then taking hold of the arm, the body paſſed

with the greateſt eaſe, leaving the head behind, but ſo low down in the pelvis, that it was eaſily extracted by a finger in the mouth, and thumb under the chin, without the uſe of any inſtrument, or the aſſiſtance of a labour pain. The child was not large, or the difficulty of ſeparating the vertebræ of the neck by means of the crotchet, would have been greater; it may, however, I apprehend, always be accompliſhed with this inſtrument much eaſier than with the common blunt-hook; but if filed to an edge on the inner ſide of the bend, this might perhaps be a very convenient inſtrument for ſuch a purpoſe, and appears to be the very ſame as that recommended by Celſus.

"As I do not know that any caſe has been publiſhed in which the practice of Horne, as recommended by Heiſter, and ſince recommended by Dr. Garthſhore, has been had recourſe to, and the event being fully anſwerable to our expectations, I preſume it will be thought worthy of attention.

"In the above account I have purpoſely ſpoken of the uterus as being ſtrongly contracted round the body of the child, without adverting to the nature of that contraction, as ariſing from the natural elaſticity of the uterus, or from its increaſed action in expulſive efforts or labour pains; becauſe, whatever be the kind of contraction, the nature of the difficulty is the ſame, varying only in degree. It may not be amiſs, however, to repeat here, what has been properly laid down by Dr. Denman,* that whenever there are ſtrong labour pains preſent, turning ought not to be attempted, and that not only on account of the increaſed difficulty and danger of the operation, but becauſe whenever there are ſtrong forcing pains preſent, a favourable iſſue may under all circumſtances be expected; for, as if Nature felt her own inability to accompliſh the delivery in croſs-preſentations, there are rarely any pains; and where theſe exiſt to a certain degree, I have always found that from the ſmall ſize of the child, or, which amounts to the ſame, the large dimenſions of the pelvis, the child was about to be expelled double, or that the head or breech were coming down with the arm, though not yet within reach of the finger. Often, however, when there are no pains, whilſt the patient is left to herſelf, the uterus is immediately thrown into ſtrong action by the irritation which the attempt to introduce the hand muſt neceſſarily occaſion, and this circumſtance always adds to the difficulty and danger of the operation. It ſeems probable that opium, ſo frequently recommended to be given before the operation is commenced, may in this caſe be uſeful; I have not, however, been able to decide whether it is really ſo or not. Opium ſeems to me to increaſe the action of the uterus as exerted in labour pains, although its irregular ſpaſmodic action, producing pains reſembling thoſe of labour, is certainly diminiſhed by it. But notwithſtanding this irritability of the uterus, by proceeding with

caution in the manner recommended by Dr. Denman, carefully avoiding all exertion of force during the action of the womb, the delivery may for the most part be safely accomplished, though with great trouble to the operator; for by repeatedly exciting the action of the uterus, its contracting powers become more and more languid, and at length frequently cease entirely, when the delivery may be accomplished with tolerable ease and safety. If, on the other hand, a strong man is determined, without regard to the resistance, to overcome every obstacle, he may succeed in his purpose, and that perhaps in a little time, but the event will be too frequently fatal."

In a letter to Dr. Sims, Dr. Clark says, "Much experience, in difficult cases, such as you describe, had taught me to dread the operation of turning the fœtus in utero. Where the death of the fœtus is certain, either by the putrid state of the integuments of the presenting arm, or by a prolapsed umbilical chord, I have been accustomed, some years past, to instruct my pupils to attempt the operation of Embryotomy with Smellie's large perforating scissars and crotchet, and to endeavour to get away the fœtus piece-meal, in any manner which appeared to them least distressing to the patient.

"In July, 1800, I was called on to deliberate with a surgeon of eminence in this city, in a case where the liquor amnii had been some days evacuated before any examination per vaginam was made; the arm and shoulder of a full-grown putrid fœtus were impacted into the brim of the pelvis. Before I saw this patient, the gentleman in attendance had in vain attempted to turn the fœtus. The resistance to every reasonable exertion appeared to him then, and to me, afterwards, insurmountable. Under these circumstances, I did not hesitate to propose that the presenting arm should be twisted off, and the thorax perforated freely, with the view of diminishing the bulk of the presenting part, and of promoting putrefaction. After these measures were put in practice, we agreed to wait the result of labour pains, which had hitherto been irregular and trivial. At the end of thirty-six hours the fœtus was expelled double. The patient's recovery was speedy, and in every respect favourable.

"The result of this single case had determined me to make further trials of this practice, under similar circumstances; and the perusal of your observations, leaves no room for doubting (in my mind) of the propriety of adopting it generally."

CHAP. IV. Of the MANAGEMENT in CASES of PLURALITY of CHILDREN.

The case of twins often occurs: of triplets seldom: of quadruplets rarely: nor is there perhaps a single instance where five

or more distinct fœtuses have been found contained in the human uterus, though many such fabulous histories have been recorded by credulous authors.

The signs of two or more children, such as the sudden or extraordinary increase of the uterine tumor, motion felt in different parts of the abdomen, &c. are very doubtful and fallacious: this can only be ascertained after the delivery of one child; and even then a recurrence or continuance of labour pains is not a certain and infallible criterion; neither is the absence of pains a sure indication of the contrary; as many cases have occurred, where several days have intervened between the birth of a first and second child. The chief symptoms to be depended on are, 1st, The child being of a small size, and the quantity of liquor amnii so inconsiderable as not to account for the bulk of the woman in time of pregnancy. 2dly, The bleeding of the funis umbilicalis next the mother. 3dly, The remora of the placenta. 4thly, The uterine tumor not sensibly diminished, which, very soon after delivery, in ordinary births, will be found gradually shifting lower and lower, and will feel at last as a hard circumscribed tumor like a ball between the umbilicus and pubes. Hence the utility of the general practice of applying the hand externally on the abdomen, in every case after delivery; by which an accurate knowledge will be formed of the nature and manner of the uterine contraction. When, from any of these circumstances, there is reason to suspect another child, the most certain and infallible manner of discovering it is, the passing of a finger, or the introduction of the hand into the uterus, where another set of membranes will be perceived, and probably some part of the child presenting through them.

The position of twins or triplets is commonly that which is most commodious, and which will occupy the least room in utero: their situation is often diagonal; though they may present in every possible posture. Thus, therefore, the general rules recommended for the delivery of one child, are equally applicable in the case of twins, triplets, &c.

It has been the general practice with many, after the birth of one child, to pass the hand immediately into the uterus, to break the membranes, catch hold of the feet of the child, and thus deliver. But this is certainly bad practice, whatever authors have said to the contrary. If the woman is healthy, and the child presents favourably, that is, with the head, breech, or feet, natural pains ought to be waited for, when the child will be expelled by the force of these only; failing which, manual assistance, as in other cases, must be had recourse to.

It very rarely happens, when the first birth is preternatural, that the second membranes are ruptured in making the extraction. Should this prove the case, the limbs of the children may be confounded, so that a leg and an arm, or three legs, or arms of different

children, may prefent; which, however, will make little difference in the mode of delivery; the accoucheur will endeavour to lay hold of the foot or feet moft readily within his reach, and will be cautious, in bringing them down, to make fure they belong to the fame body.

If the child prefents crofs; if floodings, convulfions, or other dangerous fymptoms, fhall take place; if the woman has fuffered much in the firft labour; and if, after feveral hours, a recurrence of labour pains does not enfue; the hand muft then be introduced into the uterus, the membranes muft be broken, and the child muft be extracted by the feet; or, if the head remains locked in the pelvis, and, from want of ftrength in the woman, cannot be expelled, the treatment is the fame as in other laborious births.

In twin-cafes it may be recommended as a general rule, to avoid precipitating the delivery of the fecond child till the woman fhall have refted a proper time, and till, by the contraction of the fundus uteri, the fecond fet of membranes occupy the place of the firft, and be protruded as far as the os externum; when, and not before, the delivery may fafely be affifted, fhould circumftances occur to render fuch affiftance neceffary: whereas, by breaking the membranes and evacuating the waters when the child lies high in the uterus, a flooding may be brought on, or a fpafmodic conftriction of the uterus round the body of the child may be occafioned, which may render the delivery both difficult and dangerous.

The placentæ of twins, triplets, &c. generally adhere, though fometimes they are diftinct, and may be thrown off at different times after the birth of the different children; fo that the practitioner fhould be on his guard, and never fhould leave his patient till he makes fure there be no more children. When a fecond child is difcovered, no attempts ought to be made to extract the placenta till after the birth of the remaining child or children; as the woman would be fubject to flooding, which might prove of fatal confequence before the uterus could be emptied of its contents.

In cafe of plurality of children, a fecond ligature fhould be applied on the funis, on that end next the mother, immediately after the birth of every child; and a gentle compreffion fhould be made on the abdomen of the woman after the firft delivery, which muft be gradually tightened after every fucceeding one, to prevent the confequences of a fudden removal of uterine preffure, which is to be dreaded where the diftenfion has been confiderable.

The placenta, in fuch cafes, muft be managed in much the fame manner as ufual. In twins, &c. it generally feparates with great facility, provided time has been given for the uterus to contract. Both chords fhould be gently pulled; and when it advances towards the uterine orifice, where, being large and bulky, it commonly meets with confiderable refiftance, it requires the introduction of a finger or two into the vagina for bringing down the edge, after which the body readily follows.

CASES.

The following cafes of two or more children, delivered at one birth, are recorded by Dr. Smellie.

CASE I.—"I was befpoken," fays he, "to attend a patient, who was of a delicate and tender conftitution, and had fuffered much in a former labour. I was called to her in the evening, and found the os uteri but very little open. The head of the child prefented; but the pains were weak and feldom. Expecting that it would be tedious and lingering, as the former, I fent for my midwife, to attend her, who was to call me when fhe found the woman near delivery. I was fummoned in about two hours, and found the os uteri largely open, and the membranes pufhed down without the os externum, which had an uncommon feel. When I introduced my finger into the vagina, I felt thefe membranes and waters as coming down at the fide of the head. As the mouth of the womb was largely opened, and thefe membranes, with only a fmall quantity of waters, were hanging loofe without the external parts, I pulled them away; but touching in the next pain, I found another fet of membranes, and waters, ftill before the head. I alfo felt through them, that the fontanel prefented; and by the futures, that the forehead was to the left fide, and the vertex to the right. Being afraid that this pofition would occafion a tedious labour, I pufhed up the forehead, that the vertex might advance; in doing which, the membranes broke, and the head immediately was forced down to the lower part of the pelvis. In two or three pains more, although the fontanel ftill prefented in the middle, yet the child being fmall, the face and forehead turned backwards to the concave part of the facrum, and the vertex turned out below the pubis, and was foon delivered. After I had tied, and cut the funis, and given the child to an affiftant, I examined, to find if the placenta was coming down; but inftead of that, the head of another child prefented; and as I felt no waters or membranes before it, concluded that thofe were its membranes which came firft down. The vertex prefenting; the patient having frefh pains, and not weakened by the former labour; the membranes being broken, and the waters gone, it would have been imprudent here to turn the child, and bring it footling, as I commonly ufed to do in other cafes, where the membranes were not broken. On this occafion, I did not mention that there was a fecond child, left the woman fhould have been uneafy; but faid, that I commonly waited to fee if the placenta would come down flowly with the after pains: and the fecond child being delivered foon after, gave great joy to the mother, as well as to the affiftants. The two placentas came likewife down gradually in one cake."

CASE II.—"When called to this cafe, I was informed by the midwife, that fhe had delivered the woman fafely of the firft child, which came in the natural way, about fix hours before. She faid

there was a second child, which lay at first so high, that she could not distinguish whether it came right or wrong, till the woman had fresh pains, which increased, and grew stronger in about three or four hours after the first child was delivered. These forced down, and broke the membranes; although the pains had been frequent and strong, and the head pretty low down, it was still somehow retarded.

"I examined, and found that the right ear presented; that the face was towards the left side of the pelvis; and that the right bregma rested on the pubis. During the next pain, I introduced my hand into the vagina, and pushed up the head at the left side. As the pain continued, and increased, I withdrew my hand, and the vertex was immediately pushed down to the lower part of the right ischium. Being then called to another patient, I left the woman to the care of the midwife, expecting she would soon be delivered with the labour pains. In about two hours I was again called, and found the head much in the same situation as when I left her, *viz.* the forehead to the upper part of the left ischium, the occiput to the under part of the right, and the left ear at the pubis. The midwife told me, that she had several strong pains after I went away, but that now they were grown weaker. She also said, that there was a pretty large shew at times, and seemed apprehensive of a flooding coming on. I then caused her to be placed in a side position, and delivered the child with the forceps.

"I found at first the delivery was retarded by the wrong position of the head; when that was remedied, another difficulty proceeded from the uterus being contracted before the shoulders, and the funis surrounding the neck three times; which last I disentangled, by slipping it over the head, after it was delivered. This second child, contrary to most cases of twins that I have attended, was much larger than the first.

"The placentas formed one cake. A case of the same kind succeeded in the same manner with a practitioner of Bath."

Case III.—"I was bespoken, and called to a gentlewoman in labour, who had been very weak and low for many months, and much emaciated, from a spina ventosa in her knee; so that every body was surprised at her being with child. She was delivered in a few pains after I arrived. While I was employed in tying and dividing the funis, she told me, that the motion of the child had been different for the last fourteen days, from what it had been before; that in the last fortnight she had felt it low down, and on the right side; whereas, before that time she had perceived it stir higher up, and at both sides. After delivery, she laid her hand upon the abdomen, and called out that it was still very big. I then examined for the placenta, and found the membranes, waters, and head of another child presenting. Without saying any thing of the matter, I slipped my hand up into the uterus, broke the membranes,

and after getting my hand within them, turned the child, and delivered it by the feet. By its being very livid, and the ſcarf-ſkin eaſily ſtripping off, it appeared to have been dead for the ſpace of a fortnight. The placentas formed two diſtinct cakes."

CASE IV.—" A woman who had borne children before, and was come near to her full time, fell in labour about fourteen days after ſhe had been frightened by the ſecond ſhock of the earthquake, which happened that year. The midwife telling the huſband, that there was ſomething uncommon in his wife's caſe, and I being immediately called, ſhe told me that ſhe certainly found two children preſenting at once, and was afraid that they might entangle and interrupt one another in the paſſage; that the head of the one preſented, which ſhe ſuſpected was dead, from the ſkin of the head feeling ſoft and pappy, and the bones of the ſkull looſe within the integuments: that the legs of the other preſented, which ſhe was certain was alive, from feeling the child move them.

" No ſooner had the midwife given me this information, than the patient was attacked with a very ſtrong pain, and the midwife was deſired to make haſte into the room, for that ſhe would certainly have work immediately; accordingly ſhe had juſt time to receive the firſt child, that preſented with the head; it was dead, as the midwife foretold, and appeared to have been ſo from the time that ſhe received the fright; and in two or three pains more, the child that preſented with the feet was forced down, and delivered alive."

CASE V.—" Soon after I began to teach midwifery, I was called to one of the poor women who had beſpoken me to attend her with my pupils. When I arrived, I found the breech preſenting, with the thighs to the ſacrum; but as the pains were gone off, on the diſcharge of the waters, and the breech was ſtill high, I expected that it would require ſome time to ſtretch the parts more fully before it could come lower down, and be delivered. I went to a coffee-houſe in the neighbourhood, and ſent for thoſe who then attended me; but before they all arrived, a meſſenger came in a hurry, telling us, if we did not make haſte, the child would be delivered before we could reach the place. This was actually the caſe. I told the pupils, that although they had miſſed ſeeing the labour, yet they would have an opportunity of obſerving the delivery of the placenta. I then examined; but inſtead of the placenta, I found the breech of another child preſenting, in the ſame manner as the firſt, which, in two pains more, was delivered with very little aſſiſtance; and the two placentas, which formed only one cake, immediately followed.

" The children were ſmall; and although the woman was of a ſmall ſtature, yet neither ſhe, nor any of her acquaintance, ſuſpected that ſhe was with child of twins."

CASE VI.—" In this inſtance, the arm of the firſt child had been protruded ſeveral hours after the membranes broke, and was pretty much ſwelled before I was called.

"As the woman lay on her left ſide, I tried to introduce my hand into the vagina; but finding the arm obſtructed the paſſage, I doubled it, and eaſily puſhed it before my hand into the uterus. While I went up farther, to ſearch for the feet, I found another child incloſed in its membranes, a circumſtance which made me advance more cautiouſly, for fear of breaking them, as they lay towards the left ſide, and fundus uteri, but more forwards than backwards. I had introduced my right hand, and finding that the legs of the child lay backwards, and to the right ſide, towards the fundus, I was obliged to withdraw that hand, and introduced my left, with which I brought down the legs, and delivered that child. The uterus immediately contracting, the placenta and membranes of the firſt child, with the membranes and waters of the ſecond, preſented; but the placenta was loweſt, and being ſeparated from the uterus, came eaſily down into the vagina, by pulling gently at the funis.

"Having delivered the cake, and finding a pretty large quantity of blood follow, I inſinuated my right hand into the vagina, and found, within the membranes, the head of the other child preſenting. Puſhing farther up, and breaking the membranes, I turned this child, and brought it footling alſo. I ordered a cataplaſm to be applied to the firſt child's arm, which was ſwelled; the ſwelling in a few days ſubſided, and the child did very well."

CASE VII.—"I was called in the next year to a woman in labour. The firſt child preſented with the hands, feet, and funis in the vagina; I tried, as ſhe lay on her left ſide, to introduce my hand and deliver the child; but as I could not keep the patient ſteady in that poſition I turned her to the ſupine poſture. After I had introduced my hand into the uterus, I found the head high up to the left ſide; I then withdrew my hand, took hold of the legs, and delivered the child.

"Having tied and ſeparated the funis, I deſired the midwife to ſit down, and deliver the placenta, by allowing it to deſcend ſlowly; but ſeeing her attempting to puſh up her hand, I deſired that ſhe might rather wait, and ſignified if there ſhould be any difficulty afterwards, I would aſſiſt. She telling me there was ſome more work for me, I immediately ſuſpected that there was a ſecond child, which I found preſenting in the ſame manner and brought footling alſo.

"The placentas not following for a conſiderable time after, I puſhed up my right hand into the uterus, ſeparated and delivered one that adhered to the left ſide; and after that the other which adhered to the fundus."

CASE VIII.—In this caſe three children were delivered by Mr. Proſſer, eldeſt pupil to Dr. Smellie, who was then otherwiſe engaged. "I touched the woman," ſays he, "and felt, through the membranes, both hands and feet blended together. The os

internum being well dilated, I broke the membranes, disengaged the latter, and pulled them down to the passage, pushing up the head at the same time; by these means I finished the delivery.

"I sought afterwards for the placenta; but finding a more than usual resistance, I slid my hand along the chord into the uterus, where I found the membranes and waters of a second child.

"I gave a gentle pull to see if the first had not its own placenta; but finding a resistance, I opened the membranes of the second, which presented like the former, and consequently required the same treatment.

"Having divided the chords, I pulled then sometimes alternately and sometimes together, but without effect, so was induced to introduce my hand a second time, and extracted two placentulas firmly connected by an intervening membrane.

"By this time I thought my labour ended; but was deceived: for in a few minutes after she complained of fresh pains; and on enquiry, it appeared to be a third child, which presented a right hand and foot. I introduced my left hand into the uterus, and pushed up in order to get at the other foot; but the uterus being strongly contracted to the body of the child, it was with great difficulty I accomplished it: the placenta followed soon after."

CASE IX.—The delivery of three children is thus described in a letter from Dr. Harvie.

He was called to a patient about the latter end of the fourth month of her pregnancy; but she was as big as one come to the full time, and apprehensive of an ascites in the abdomen: however, on examining the belly, and she being sensible of the motion of the foetus, he found the bigness proceeded from the stretching of the uterus. Her complaints, from this time till she fell in labour, were chiefly cardialgia, vomiting, and difficulty of breathing, and costiveness; for all which she was often bled, and seldom missed taking magnesia. From the constant vomiting she daily lost strength, and was much emaciated.

When she was taken with labour pains he found the os uteri open to the diameter of half a crown, and the head of the child very low. Her pains being slow and weak, he ordered a clyster, which operated; after which the pains went quite off. When he called next day, he was informed that the membranes were broken, that a large quantity of waters was come off, and still continuing to drain away; and he was informed, that she had not been so easy for four months; for she could now breathe, and had taken some nourishment, but had no pains.

He was again called the following day at one o'clock in the morning. The pains were not strong or frequent; but the os uteri being sufficiently dilated, the child was born in about fifteen minutes.

After tying the navel-ſtring, and giving the child to the nurſe, he found the head of another preſenting. At the firſt pain he broke the membranes, and in two more this child was alſo delivered. After taking care of this, he found there was a third, from the ſtill great diſtenſion of the uterus; but the patient being faint, and in order to avoid the danger from the ſudden emptying of the uterus, he pinned a long towel moderately tight round the abdomen, and gave her the following draught.

(No. 15.) ℞ Confect. Damocrat. ʒß.
Aq. menth. ſativ. ℥iß.
Sp. nucis moſch. ʒij.
Tinct. opii gtt. xv.
Syr. altheæ ʒi. Miſce.

Examining again, and not finding the membranes puſhing down, or any part of the child; and being apprehenſive that it might preſent wrong, he ſearched higher, and found the head and membranes at the brim of the pelvis. Theſe being broken, this third child was delivered in the courſe of the next pain. Although the patient had hitherto loſt but little blood, yet as there was more coming, and the woman was weak, he gently aſſiſted and brought the placentas away; two of them were joined together, and one ſeparate.

By this time ſhe was very faint; but the draught taking effect, ſhe dropped aſleep, and after ſome hours ſo far recovered as to be able to bear the fatigue of ſhifting. She had a ſevere cough for three weeks before delivery, which gradually abated afterwards, and is now pretty well recovered. The children were three fine boys.

He obſerves, that from ſeveral twin caſes which have fallen under his notice, he has reaſon to think that one principal evidence of a woman's being with child of more than one, is the uterus riſing much earlier up in the abdomen, than is uſual when there is only one. The above patient was as big at the latter end of the fourth month, as women are commonly at their full time.

CASE X.—This is a caſe of twins; the ſecond child having been delivered, in the ſeventh month, by Mr. Giffard.

"I was ſent for," ſays he, "about four o'clock in the morning, to the wife of a ſnuff-box maker in Dean-ſtreet, Red-lion-ſquare, who was, according to her calculation, about ſeven months gone with child. I had been with her about three months before, when ſhe was under ſome apprehenſions of miſcarrying, and by proper applications I cured her at that time; but now one fœtus was brought away before I was ſent for. I would have immediately paſſed my hand in ſearch of the placenta; but the woman could not be readily perſuaded to admit me, and made ſome ſtruggle until ſhe was overcome by the perſuaſions of her friends and the apprehenſion of the danger ſhe was in, ſhould it not be

brought away; so that at last she permitted me to pass my whole hand into the vagina, and soon to the os internum, which I found so much contracted that it would scarcely admit the ends of four fingers. But, having by degrees dilated the orifice, I introduced my hand into the uterus, and found something harder than a placenta. This proved to be another fœtus inclosed in its membranes, which were much distended by the waters.

"I broke the membranes immediately with the ends of my fingers, and then putting my hand within them, I searched for the feet. The first part I met with was the head, which I passed by, and went on in search of the feet, and soon found one foot. This I brought out, and as I had sufficiently dilated the os internum, the fœtus being likewise very small, I judged I might easily draw it out by the leg already brought down, without giving her fresh pain, by passing up my hand again to fetch down the other.

"I therefore took hold of the leg I had secured, and gently drew it forwards; I say gently, for if I had used any force, I might have torn it from the body, the leg being very small and tender: at the same time I advised the woman to assist by bearing down strongly, which much contributed to the bringing out of the hips, body, and head, all which soon followed. Upon passing up my hand to fetch the after-burdens, there being two entirely separate, I met with the placenta of the fœtus first born, protruded and lying in the vagina; this I immediately brought away, and then repassing my hand, I found the other lying within the uterus, but wholly separated from it, so that I had no more difficulty in bringing this than the former."

In the Memoirs of the Academy at Paris (H. 1727, page 15, 20, 21), is an account of two children delivered eight days after one another.

CHAP. V. Of the Management of Monstrous Births.

Monsters are of various sizes and forms, and, unless very small, the posture favourable, and the woman well made, will prove the cause of a difficult and troublesome delivery. Sometimes a child is monstrous from a preternatural conformation of parts, such as a monstrous head, thorax, abdomen, &c. At other times, there is a double set of parts, as two heads, two bodies with one head, four arms, legs, &c. But such appearances seldom occur in practice; and, when they do, the delivery must be regulated entirely according to the circumstances of the case. A large head, thorax, or belly, must be opened. If two bodies united together are too bulky to pass entire, they must be separated; the

ſame of ſupernumerary limbs. If the poſture be unfavourable, it muſt be reduced when practicable; otherwiſe the extraction muſt be made with the crotchet, in the beſt manner the circumſtances of the caſe will admit of; always, in caſes of danger or difficulty, giving the preference to the ſafety of the mother, without regarding that of the child.

CASES.

To what has been ſaid on the ſubject in a former part of this work, we think it neceſſary to add the following inſtances of monſtrous births, which are related in Dr. Smellie's works.

Case I.—The hiſtory below is of two children adhering to one another at the ſide of the breaſts and bellies. They had both hare lips, and but one navel-ſtring; the veſſels being ſeparate as they enter the ſkin of the abdomen, and each child having its own. The mother, who before had ſeven or eight children, miſcarried with theſe at the end of twenty weeks, from her great uneaſineſs, as ſhe fooliſhly imagined, in longing for a chop of bacon. She was taken at firſt with a conſiderable flooding, which was moderated by blooding, and anodyne medicines. The next day, finding ſome ſtrong pains, her midwife was ſent for, who delivered her in a few hours; notwithſtanding their ſmallneſs, and one of them preſenting with the feet, ſhe found great difficulty in extracting them, as appeared by the laceration of one of them which was ſtitched up again. They had no ſigns of life. The mother has ſince had two fine children.

It is remarkable of the father of theſe children, that he had no teeth before the age of one or two and twenty; but afterwards had a very good ſet.

Case II.—This child was born with part of the ſkull wanting. It was a male child, of an uncommon ſize in his body and limbs, with very broad ſhoulders, and a ſhort, thick, brawny neck. The head was ſmaller than thoſe of moſt infants that come in due ſeaſon, as this did. The noſe was broad and flat, the eyes full, large, and very prominent, ſo that the lids could not cover them; the ears were remarkably large and thick. There was no ſkull to cover the brain, and the edges of the bones of the lower part of the head were as ſtraight and ſmooth as if they had been ſawn aſunder immediately above the orbits of the eyes. There was wanting the os frontis on the fore part, and on the back part almoſt the whole of the occipitis. The oſſa bregmatis were entirely wanting, and as there was no ſcalp, the brain was covered by nothing but the pia and dura mater, which looked of a dark livid colour, and was puſhed out in many places by the brain, ſo that it made an unequal ſurface for want of bones to confine it. This inequality and ſoftneſs, together with the edge of the bones, was what ſurpriſed the midwife, and made her expect a more

difficult delivery. The account then given by the mother, as the probable occasion of this disaster, is as follows.

Upon the 9th of April, 1747, when she was near two months gone with child, she was grievously frightened with thinking on lord Lovatt, who was that day to be beheaded. Her husband was gone to see the execution amongst the crowd on Tower-hill, and when the news came to her hearing that a scaffold was fallen down, by which accident many people were hurt, and some killed on the spot, she immediately feared that her husband might be of the number, and was greatly affected. While she was under this dread and apprehension, an officious idle woman came to her and said, that a friend of hers, for whom she had a great regard, was killed on the spot, and that she saw his brains on the ground; upon this the poor woman put both her hands on her head in great agony, and immediately fainted away.

CASE III.—In the Philosophical Transactions (No. LXV. p. 2096) is an account, by Dr. Durston, of a monstrous birth, which had two heads, two necks, four arms, and four legs perfect, and well shaped; but only one trunk. There was no appearance of lungs, and only one large heart, one midriff, one umbilical cord, one large liver, one stomach, four kidneys, two urinary bladders, two wombs. There was only one colon, which terminated in two intestina recta. It weighed eight pounds and a quarter, and the length from head to foot was full eight inches and a half.

CASE IV.—There is another monstrous female birth described by Dr. Samuel Morris, in the same work (No. 138, p. 961). There were two heads, and all the parts double above the diaphragm, and single below, except the appearance of two stomachs. The uterus was of a common size; but the clitoris large: there were only two legs and two arms, the secundines were very large, and weighed about eight pounds. One was dead, and the other just breathed.

CASES V. and VI.—We find another account of a double birth, in which the children were joined at the breasts (Philos. Transact. No. 2, p. 21). They did not wake and sleep together. They also cried, sucked, and exonerated apart.

The same paper relates, there was such another birth in Wales, and the children lived so long till they could talk to each other, which they did in tears, when they thought that one must survive the other; but both happened to die together.

CASE VII.—There is described a monstrous birth, much of the same kind as the two last, in the same Transactions, No. 308, p. 2245, by Mr. Robert Taylor.

CASE VIII.—In the Philosophical Transactions, No. 453, p. 837, is an account of a monstrous boy, seen at Montpelier by Dr. Andrew Cantwell. He was then about thirteen years old,

and had the lower parts of another boy attached, ſo that the fore parts of each faced the other.

CASE IX.—This is deſcribed in " Reflections on Generation, and on Monſters," by Dr. Supervile. See Philoſophical Tranſactions, No. 456, p. 294.

Beſides the above caſes, there are ſeveral other papers in the ſame work, deſcribing births, in which the bones of the upper part of the cranium were wanting; in moſt of which the cerebrum and cerebellum were alſo wanting: thoſe that were born alive died ſoon after the birth. (*Vide* No. 99, p. 6157; No. 226, p. 439; No. 228, p. 553; No. 234, p. 717; No. 251, p. 141; No. 320, p. 310).

In the Philoſophical Tranſactions, No. 487, p. 325, is a letter from Dr. Huxham to Dr. Mortimer, concerning a child born with an extraordinary tumor near the anus, containing ſome rudiments of an embryo.

In the Philoſophical Tranſactions, No. 472, p. 10, is an inſtance of ſpina bifida. See alſo our fourth volume, p. 12.

In the Memoirs of the Academy of Sciences at Paris (M. 1701, p. 112), is an account of a fœtus found in the ovarium of a woman.

In the ſame (H. 1703, p. 43), an account of a puppy whelped without a gullet, a circumſtance proving that the fœtus could not be nouriſhed but by the funis.

In the ſame (H. 1711, p. 26), is the deſcription of a fœtus without cerebrum, cerebellum, or ſpinal marrow.

See (Id. 1712, p. 40,) an account of a male fœtus at its full time, which had neither brain nor ſpinal marrow, and which lived twenty-one hours, and took ſome nouriſhment.

Ibid. (M. 1732, p. 309), of a monſtrous fœtus with two bodies, the one male, the other female.

In the German Ephemerides there is a great number of hiſtories of ſuch monſtrous productions. *Vide* alſo Ruyſch.

Caſes from Mauriceau.

I. In page 53, and 64 Obſ. he mentions having ſeen a dead child of a woman lately delivered at ſeven months, of a very monſtrous figure, having the arms and the feet quite miſſhapen, and the head without any neck, joined immediately to the breaſt, having on the head, inſtead of the brain, a ſort of thick flat cap or cawl, like a red wen. This had a production like a tail, which reached along the ſpine as far as the os ſacrum; and on the right ſide of the navel there was a conſiderable livid tumor like a ventral hernia, in which ſeveral of the contents of the abdomen were contained. This child had been dead ſome days before it was delivered, as appeared by the epidermis, which came off eaſily,

and the monſtrous figure ſome have imputed to the diſorder of mind and body, which a great fright or vexation the mother met with in the beginning of her geſtation had thrown her into.

II. In page 301, and Obſ. 363, he mentions his having delivered a woman of her firſt child, which had all the fleſhy or muſcular parts of its body quite hard and ſchirrous.

III. In Obſ. 118, and page 63, he gives an account of his having delivered a woman in the eighth month, of a child, whoſe head was of a monſtrous figure, being without any brain, but inſtead of all the upper part of the head there was only a reddiſh-brown ſubſtance; there appeared likewiſe the inferior extremities of the occipital bones, and the two eyes very prominent. Its feet were turned inwards. This monſtrous conformation was aſcribed to great fatigue in a journey.

IV. He mentions having ſeen, at the fair of St. Lawrence, two male children dead, whoſe bodies were joined together towards the upper part of the thorax. The mother had been five months gone; but no particularities are mentioned at the birth.

Monſ. Lamotte, book 4, chap. 14, gives ſeveral caſes of mutilations and deformities in children. In fact, theſe arbitrary combinations of twin parts in utero are of every degree of variety, as the cabinets of curious phyſiologiſts will teſtify; but there is perhaps none more curious in all reſpects, than the boy with two heads, born in the Eaſt Indies, and who lived long after the birth, deſcribed in a late volume of the Philoſophical Tranſactions by Mr. Home.

CHAP. VI. Of PREMATURE DELIVERY.

Dr. Denman, and ſome other eminent writers on midwifery, have alluded to this expedient as a method of preſerving the lives of children, without adding to the danger of the women; if in any caſe the pelvis be ſo much diſtorted, or ſo ſmall, as abſolutely to prevent the paſſage of the head of a full-grown child, yet without falling ſo far ſhort in its dimenſions as to prevent the head of a child of a much leſs ſize from paſſing through it.

"Melancholy are the reflections," ſays Dr. Denman, "when a woman has a pelvis very much diſtorted (and ſuch women have uſually a wonderful aptitude to conceive), that there ſhould be no chance, or very little, of preſerving the lives of her children; and yet, in the courſe of practice, I have, in ſeveral inſtances, been called to the ſame woman, in five or ſix ſucceſſive labours, merely to give a ſanction to an operation, by which the children were to be deſtroyed. It is to the credit of the profeſſion, that every method, by which the lives of parents and children might be preſerved, has been deviſed and tried; and, though frequent occaſions

for using some of these methods cannot possibly occur in any one person's practice, it is right that all should be acquainted with what has been proposed and done in every case, with or without success.

"A great number of instances have occurred to my own observation, of women so formed, that it was not possible for them to bring forth a living child at the termination of nine months, who have been blessed with living children, by the accidental coming on of labour when they were only seven months advanced in their pregnancy. But the first account of any artificial method of bringing on premature labour was given to me by Dr. C. Kelly. He informed me, that about the year 1756, there was a consultation of the most eminent men in London at that time, to consider of the moral rectitude of, and advantages which might be expected from, this practice, which met with their general approbation. The first case in which it was deemed necessary and proper fell under the care of the late Dr. Macaulay, and it terminated successfully. Dr. Kelly informed me, that he himself had practised it; and, among other instances, mentioned that the operation had been performed three times upon the same woman, and twice, the children had been born living. The thing has often been the subject of conversation, and proposed by writers, but some have doubted the morality of the practice; and the circumstances which may render the operation needful and proper have not been stated with any degree of precision.

"With regard to the morality of the practice, the principle being commendable (that of making an attempt to preserve the life of a child which must otherwise be lost), and nothing being done in the operation which can be injurious to the mother, but, on the contrary, a probability of lessening her sufferings; I apprehend, if there be a reasonable prospect of success, no argument can be adduced against it, which will not apply with equal force against inoculation, against medicine in general, and, in fact, against the interposition of human reason and faculties in all the affairs of life. Such an argument would lead us back to the absurd doctrine of predestination, if, with justifiable intentions, and without producing any comparative present evil, we may not use our endeavours to extricate our fellow-creatures from evils which threaten them, or under which they may be actually oppressed."

Having thus settled the point as to the morality, Dr. Denman next considers the safety and utility of the practice of bringing on premature labour in certain cases.

"As to its safety," says he, "having reasoned upon the structure of the parts concerned in the operation, and having carefully attended to all the circumstances which have occurred when it had been performed in more than twelve cases, in which I have either performed it, or it has been done by my advice and

persuasion, I have not known one untoward or hazardous accident that could be imputed to it; and in the greater number of these cases the children have been born living. Many instances of this operation being performed successfully, have, since my first proposal of it, been recorded by others. I therefore feel authorised to say, as far as my reason or experience enables me to judge, that the operation of bringing on premature labour, in the cases to which this discourse has any reference, is perfectly safe to the person on whom it may be performed.

"But respecting the utility of the operation, the statement first made of the intention or purpose with which it ought to be done, that is, to try whether the head of a small child will not pass through a pelvis too much narrowed in its dimensions to allow one of a common size to pass, will shew, that the objects of the operation are circumscribed within certain limits. Should the cavity of the pelvis be of its natural size, this operation is out of the question, and never can be required on that account. If the cavity of the pelvis, though reduced in its dimensions, be such as to permit the head of a full-grown child to be squeezed through it by the force of strong and long-continued pains, this operation is not required, and ought not to be performed. If the pelvis be so far reduced in its dimensions as not to allow the head of a child of such a size as to give hope of its living to pass through it, the operation cannot be attended with success. It is in those cases only in which there is a reduction of the dimensions of the pelvis to a certain degree, and not beyond that degree, that this operation ought to be proposed, or can succeed.

"It would be highly satisfactory, if I were able to state with precision the exact dimensions of the cavity of the pelvis of the person on whom it might be needful to perform this operation, and on whom it might be performed with success. But, as all the instruments, contrived for measuring the pelvis in the living woman, too imperfectly answer this purpose, to enable us by them to form a guide of practice; and as the head of a child before it is born can never be accurately measured, and of course the relation between them must be unknown; the determination must be left to opinion, or to former proofs: and those who are experienced will not commit any great mistake in their conjectures, even if they have no other than this probable evidence. Under circumstances and in situations just preventing the successful use of the vectis or forceps, and just compelling us to the fatal measure of lessening the head of the child, it may become a duty to propose, on a future occasion, the bringing on premature labour; at seven months, or any later time, according to our sense of the disproportion existing between the head of a child and the cavity of any particular pelvis.* It can hardly be doubted, but that the casual events of practice first inspired the notion of this method in the

mind of fome perfon, who, adverting to the fortunate termination of premature labours coming on fpontaneoufly, or of very fmall children, in cafes of diftortion of the pelvis, endeavoured to imitate by art what not unfrequently happens naturally. It is alfo to be confidered, that in a child born prematurely, the bulk of the head is not only much lefs than at the full time, but the component parts of the head are more loofely connected and far more pliable, and of courfe its volume is more readily adapted to the fpace through which it is to pafs."

Here Dr. Denman introduces the following cafe.

" A lady of rank, who had been married many years, was foon after her marriage delivered of a living child, in the beginning of the eighth month of her pregnancy. She had afterwards four children at the full time, all of which were, after very difficult labours, born dead. She applied, in her next pregnancy, to Dr. Savage, whom I met in confultation. By fome accounts fhe had received, fhe was prepared for this operation, to which fhe fubmitted with great refolution. The membranes were accordingly ruptured, and the waters difcharged, early in the eighth month of her pregnancy. On the following day fhe had a rigor fucceeded by. heat and other fymptoms of fever, which very much alarmed us for the event. On the third day, however, the pains of labour came on, and fhe was after a fhort time delivered, to the great comfort and fatisfaction of herfelf and friends, of a fmall but healthy child, which is at this time nearly of the fame fize it would have been, had it been born at the full period of uterogeftation. In a fubfequent pregnancy, the fame method was purfued, but whether the child was of a larger fize than before, whether there was any miftake in the reckoning, or whether the child fell into any untoward pofition, I could not difcover, but it was ftill born, though the labour did not continue longer than fix hours."—

" There is another fituation," continues the doctor, " in which I have propofed, and tried with fuccefs, the method of bringing on premature labour. Some women, who readily conceive, proceed regularly in their pregnancy till they approach the full period, when, without any apparently adequate caufe, they have been repeatedly feized with rigor, and the child has inftantly died, though it may not have been expelled for fome weeks afterwards. In two cafes of this kind I have propofed to bring on premature labour, when I was certain the child was living, and have fucceeded in preferving the children without hazard to the mothers. There is always fomething of doubt in thefe cafes, whether the child might not have been preferved without the operation; but, as fuch cafes often come under confideration, and as I am difclofing all that my experience has taught me, it feemed neceffary to mention this circumftance.

" I may be allowed to conclude this fubject, without entering

into a detail of the manner in which premature labour may be brought on; becaufe no perfon qualified to decide on the propriety of this operation can be ignorant of the manner of performing it. I muft however take notice, that when the membranes of the ovum are punctured or ruptured, fome caution is required to avoid injuring the head of the child, which may lie clofe to them; and, after the difcharge of the waters, it is neceffary to obferve, that the time when the action of the uterus may come on will be very different; this happening in fome inftances in twelve hours, and in others not for twelve or fifteen days. During this interval we have only to wait patiently for the event, and when the pains come on, the labour, if natural, is to be fuffered to proceed without interruption; or, if irregular, fuch affiftance is to be given, as the peculiarity of the cafe may require. It is fcarcely neceffary to mention, that when we are confidering the propriety of this operation, it ought not to be performed when the patient labours under any hazardous difeafe; and that if complaints fhould afterwards arife, our endeavours muft be exerted to remove them before the acceffion of labour."

No doubt the high teftimony of this eminent and experienced accoucheur will have confiderable weight on the opinions of the generality of practitioners. It is our duty, however, to place fo important a queftion in different points of view, in order that the reader may be enabled to make up his mind as to the eligibility of the practice. To this end we cannot do better than give a place in the prefent chapter to Mr. Barlow's judicious obfervations on the advantages and difadvantages of inducing premature labour, with a view of fuperfeding embryulcia, the fection of the fymphyfis pubis, and the Cæfarean operation, which appears in the Medical and Phyfical Journal.

"On a fuperficial view of the fubject," fays Mr. Barlow, "it would appear to be pregnant with but few difficulties; but, on a more minute enquiry into the attendant circumftances, we fhall be compelled to acknowledge that many obftacles prefent themfelves, fome of which appear of confiderable cogency; whether the removal of thefe lie within the fphere of obftetric art, or, otherwife, wait the interference of the legiflature, time alone can only determine; it is neverthelefs incumbent on every accoucheur (before he attempts the operation) to eftablifh in his own mind the morality of the practice, and exert his utmoft fkill, by every poffible means, to extricate the environed fœtus from impending deftruction.

"This operation, however, can feldom be put in practice before it has been proved, by the event of a former labour, that the pelvis was fo much diftorted that the life of the child muft have been inevitably deftroyed before delivery could be accomplifhed; and as the human pelvis is liable by difeafe to become contracted into

various ſhapes and degrees of diſtortion, from that of a well-formed pelvis to one ſo much contracted in its different apertures that delivery per vias naturales becomes in ſome inſtances utterly impracticable. In theſe different ſhades of diſtortion, art has furniſhed us with means of accompliſhing delivery in various ways, according to the exigency of each individual deviation from the natural ſtandard; but as authors, even in the preſent improved ſtate of the art, differ in opinion on theſe important points of practice, it is to be hoped that every laudable endeavour to obviate the difficulties attendant on parturition will promote a free enquiry on the ſubject, and ultimately have a tendency to the general good of ſociety. To become acquainted with the fundamental principles of midwifery, and to aſcertain the exact dimenſions of the pelvis, is a matter of the greateſt moment to the accoucheur, before he determines on the operation; as want of this neceſſary knowledge made by the touch, may involve the practitioner in irretrievable injury to the fœtus. The diſtortions of the pelvis are generally induced by rachitis in the infantile ſtate, or by malacoſtion and exoſtoſis in the adult; it is theſe different cauſes and degrees of diſtortion which the accoucheur ſhould keep in view when making the admeaſurement per vaginam. When paſſing the finger up the vagina, and any part of the os ſacrum, or lumbar vertebræ, be perceived to project into the cavity of the pelvis, or if the rami of the iſchia, or the ſymphyſis of the os pubis, approach unuſually near each other, we may conclude that ſome degree of original mal-conformation exiſts in the bones which compoſe that aperture; yet it not unfrequently happens that the ſuperior aperture is conſiderably contracted, and the inferior cavity, or outlet, is even wider than natural: and to obtain a ſufficient idea of the ſtate of the apertures of the pelvis, in every direction, I have frequently found it neceſſary to have recourſe to the paſſing of the whole hand into the cavity of the pelvis; the three firſt fingers of which are to be conducted to the brim, where the admeaſurement may be generally aſcertained to the ſpace of a few lines, by placing them in different directions in the ſuperior ſtrait, and if, when kept cloſe together, the ſide of the fore finger touch the os pubis, and the third the projecting angle of the ſacrum, we may conclude that the ſpace betwixt the two points is manifeſtly no more than two inches, an opening through which no living mature fœtus can poſſibly be extracted alive; and when only two fingers can be placed in the ſame manner, and betwixt the two angles above mentioned, the accoucheur may reſt ſatisfied that, except a greater ſpace can be obtained in either of the ſides where the admeaſurement is made, that no other mode of delivery, per vias naturales, can, with ſafety to the mother, be adopted than either the crotchet or Cæſarean ſection. This method of proceeding will generally furniſh the accoucheur with an accurate

knowledge of the dimenfions of the pelvis, and direct him to the moft eligible refources in cafes of extreme deformity. In every inftance where I have attempted to terminate the delivery with the crotchet, it has been my conftant practice to afcertain the exact dimenfions in every poffible direction, that I might be armed with every requifite auxiliary in each fucceeding labour.

"To thofe whofe opportunities of practice have not furnifhed them with a fufficient fhare of difcrimination by the touch per vaginam, to be enabled to afcertain to a tolerable degree of exactnefs the various fhades of diftortion which the female pelvis is liable to, I would recommend the ufe of the calipers, as an inftrument more eafily applied, and poffeffing fuperior advantages of accuracy over any other." A reprefentation of this inftrument is given in plate VI. of Baudelocque's work tranflated by Mr. Heath. An account of their mode of application and utility, Mr. Barlow tranfcribes from the 130th page, vol. I. of that author, in the following words:

'To determine how much the fuperior ftrait is defective in the aforefaid diameters, and meafure it by means of thefe compaffes, we take the thicknefs of the woman, from the middle of the mons veneris to the centre of the depreffion of the bafe of the facrum pofteriorly, by applying one of the points of the inftrument before, againft the fymphyfis of the pubis; and the other behind, a little under the fpine of the laft lumbar vertebra; and deduct three inches from that thicknefs in women that are thin, for the bafe of the facrum, and the anterior extremities of the offa pubis; the thicknefs of thefe latter being at moft but fix lines, and that of the bafe of the facrum two inches and a half; and fo conftantly fo, that I have not found a difference of a line in about five-and-thirty pelves, diftorted and contracted in all manner of ways, and in all poffible degrees.

'This fubtraction of three inches from the external thicknefs of the pelvis, in the faid directions, is alfo fufficient when the luftinefs is moderate; and we may add one or two lines more, when it is exceffive, becaufe the fat which forms the mons veneris, eafily fhrinks under the lenticular extremity of the leg of the compaffes. The refult of this procedure is fo exact, that the pelvis meafured with the common compaffes after opening the body, was not above a line over or under my eftimation in any one of my experiments. A greater precifion, if we could obtain it, would be ufelefs, fince the choice of the moft proper methods for terminating the delivery in a given cafe, cannot depend on a line more or lefs in the diameter of the pelvis. According to thefe data, the knowledge of this diameter is eafily obtained. It is four inches when the external thicknefs of the pelvis meafures feven; it is but three when the latter only meafures fix; and but two when it does not exceed five, &c. I fuppofe the woman to be thin, as moft of thofe are who have been rickety.'

"In confidering the mechanical defcent of the fœtal cranium through the pelvis," continues Mr. Barlow, "it will appear manifeftly neceffary that the dimenfions of the one fhould bear fome mathematical proportion to the other; to obviate certain difficulties, Nature has wifely ordained a peculiarity of ftructure to the fœtal cranium, the mechanifm of which is fo formed, that the head of the fœtus is lefs compact than that of the adult, and the bones more loofe and numerous, confequently are better adapted for paffing through the pelvis than if they had been firmly joined together.

"The growth of the fœtus alfo varies very much during the different ftages of geftation; the embryo increafes more rapidly in fize during the firft weeks after conception (than after it takes on the fœtal ftate, till the end of nine months), though this increafe has various ftages of irregularity, till the full period of utero geftation. The walls of the pelvis are fo firmly connected together, and the change which the fœtal head is conftantly undergoing as geftation advances, will ever remain an obftacle to this fpecies of delivery, owing to the uncertain magnitude and degree of refiftance oppofed to the pelvis during its paffage through that tube. Without multiplying the various pofitions which the fœtal head affumes during the approach of labour, it may be neceffary to ftate, that the general and moft natural prefentation, is the vertex with the ears nearly in a diagonal direction betwixt the pubis and facrum; the caufe of this part of the head defcending firft into the pelvis, may be owing in fome meafure to the foramen magnum being fituated nearer the occiput than the face, confequently is more mechanically inclined to become firft pufhed into the fuperior aperture of the pelvis; fometimes, however, the anterior fontanelle may at the commencement of labour be perceived to prefent in the axis of the fuperior ftrait, but this fmall deviation is generally rectified by the repeated action of the uterus, which forces the vertex into the axis of the pelvis, whilft the chin is bent down upon the breaft, and the face turned into the hollow of the facrum. If this procefs was not to take place, and the fontanelle was forced out of its proper direction, the labour would prove tedious, and probably might fometimes terminate in a face prefentation. The forceps and lever are inftruments well calculated for extracting the fœtus within certain bounds of difficulty, and claim a preference over every other invention, when ufed with a view of preferving the lives of both mother and fœtus; and when the fmall diameter of the fuperior ftrait of the pelvis offers a fpace for the entrance of the head of the fœtus, equal to three inches in diameter, we may not altogether reject every hope of extracting a living mature fœtus through an aperture of the above fpecified dimenfions, with either of thefe inftruments; or if the child's head is fmall, and not too firmly offified to elongate, and

allow the bones to overlap by preſſure, and the forcible action of the uterus, we may ſometimes under theſe circumſtances meet with a favourable termination, when the diameter of the pelvis is rather under three inches. On the contrary, when the mother's pelvis is aſcertained to meaſure no more from pubis to ſacrum, or in any other of the apertures, than two inches, or two inches and a half, I am perſuaded that no mature fœtus can poſſibly be brought through a ſpace of theſe dimenſions, without deſtruction to the child; it is then in this intermediate degree of diſtortion, betwixt the poſſibility of delivery (without injury to the mother or fœtus), with the forceps or lever, and that ſhade of deformity which requires the application of the crotchet, where premature delivery ſeems moſt likely to become admiſſible. A queſtion then will naturally preſent itſelf to every accoucheur who deliberates on the ſubject, namely, to what degree of compreſſibility is the mature fœtal cranium capable of undergoing, without deſtruction to the child during its paſſage through the pelvis, and what analogy does it bear in computation with one of ſeven or eight months? The ſolidity of the fœtal head, and the re-action of the bones of the pelvis upon that body, are ſo variable in different children, that no exact criterion can be formed before birth; however, I will venture to riſk an opinion, that the diameter of the fœtal head, under certain ſituations, will bear a reduction in ſize by preſſure, from a quarter to half an inch, without producing much injury to the fœtus; but when the diameter of the head becomes much reduced beyond this, by either the forceps or lever, their application becomes dangerous to the child, and of courſe inadmiſſible on that ſcore. I conſider the fœtus a mere paſſive body during its paſſage through the pelvis; nevertheleſs, I am well aware that examples are not wanting, where the fœtal head has undergone a much greater reduction by compreſſure without proving fatal; however, I would have it underſtood, that what I have advanced is what more generally takes place, and the deviations from the above rule are only exceptions therefrom. Some difference may reſult from the reduction of the volume of the cranium of a fœtus of eight, and one of nine months, as it will be generally allowed that the bones which compoſe the cranium of the latter will not admit of the ſame degree of reduction when compared to the former, yet, perhaps, a leſs variation in the ſize of the head will take place betwixt the two, during their paſſage through the pelvis, than what at firſt would appear probable, owing to the greater power of action of the uterus during labour upon the body of a fœtus of nine months, than upon an immature one of ſeven or eight; and ſome difference of reſult may alſo ariſe to the fœtus from the length of time which may elapſe during the paſſage of the head through the aperture of the pelvis.

"The next queſtion which occurs is, in what degree of diſtor-

tion of the pelvis it becomes neceſſary to have recourſe to this operation? This point will not be eaſily aſcertained, even if the accoucheur was allowed to make an examination per vaginam; and as this is a matter not altogether attainable during geſtation, it becomes requiſite to ſtate the circumſcribed dimenſions of the pelvis, wherein this operation is more likely to meet with ſucceſs: I preſume then that a pelvis, the ſmall diameter of which meaſures from pubis to ſacrum about two inches or two inches and a half, appears to favour the ſucceſs of this operation more than any other dimenſions; for, on the one hand, it is ſufficiently evident that a mature fœtus cannot be born alive, when the dimenſions are under two inches and a half; and on the other, when the ſhort diameter does not exceed two inches, the crotchet becomes neceſſary; and ſhould the ſuperior aperture meaſure only one inch and a quarter in the wideſt part of its ſuperior conjugate diameter, the only reſource for the ſafety of the mother and fœtus is the Cæſarean operation.

"If it is proved that this operation cannot be performed with any degree of certainty of ſucceſs to the fœtus, except where there is a ſpace to be gained in ſome part of the ſuperior aperture, from two inches to two inches and a half, then it will follow that this mode of delivery muſt be very much limited, inſomuch that a conſiderable degree of hazard will always attend it, owing to the want of accuracy in diſcriminating betwixt the relative ſize of the fœtal head and the dimenſions of the pelvis. Having now pointed out the diameter of half an inch, as the moſt warrantable ſpace allotted for the ſucceſs of this ſpecies of operation, when performed at any time from the latter end of the ſeventh to that of the eighth month of utero geſtation, before or after which periods, I think no one juſtifiable who induces premature labour under theſe circumſtances; nor can I altogether give credit to thoſe accounts, from whatever ſource they may have been gleaned, where it is aſſerted that premature delivery has been ſucceſsfully adopted when performed early in the ſeventh month of pregnancy, and where the diameter of the pelvis meaſured not more than two inches in the wideſt part.

"When this operation is had recourſe to, and the dimenſions of the pelvis are ſuch as promiſe ſucceſs, we ought to defer the attempt as near to that period fixed by nature for the full evolution of the fœtus as circumſtances will admit, that thereby the child may acquire every poſſible advantage to enſure a healthy ſtate of exiſtence after birth. The period of eight months, or thereabouts, is the moſt advantageous time for the performance of this operation, when we conſider the precarious ſtate of a fœtus at a much earlier period; for I will venture to predict, that not one in twenty can ſurvive the birth ſo completely as to be reared, where labour is excited earlier than the ſeventh month of geſtation: no doubt, a

few exceptions may be oppofed to this general conclufion; but if we confider the puny ftate of thefe fhort-lived individuals, and the mifery which their premature birth fubjects them to, we fhall have no caufe to approve their fituation; and few would prefer fuch an ephemeral ftate to mere nonentity.

"It is to be wifhed, that authors who have had recourfe to this operation had been more explicit in their accounts refpecting the exact period of geftation, and the premature fate of children, and how long they furvived that event; for it is not a fufficient incitement to the operation, merely to bring a being into exiftence, which muft inevitably perifh foon after birth. And this immature mode of delivery would confequently be a means of fubjecting the mother oftener to a ftate of geftation than if fhe was allowed to complete the period of nine months. To obtain premature delivery, the membranes which envelope the fœtus are generally artificially ruptured prior to that event; and the time which elapfes before the uterus refumes its expulfive efforts are very variable, infomuch that in fome cafes even feveral days have paffed before that organ has completed its evolution. When the waters are thus evacuated, and the fœtus left in clofe contact with that vifcus during its repeated contractions, I am difpofed to confider the life of the child, during its exit through the pelvis, involved in fome danger, and that proportionable to the degree of diftortion, and date of geftation. It is not fufficient that premature labour fhould be indifcriminately produced at a given period of geftation, merely with a view of fuperfeding embryulcia, it is of more importance to look forward to the prefervation of the child; for every attempt made as early as the fixth month of geftation, either with the intent of avoiding embryulcia, or preferving the life of the fœtus, will anfwer no other purpofe than jugulare mortuos; for, as I have before obferved, and what I with further to inculcate is, that every delivery excited by art, or otherwife cafually taking place at an earlier period of pregnancy than the feventh month, will generally prove deftructive to the fœtus, either during the time of delivery, or very foon after that event.

"The fufficiency of augmentation of fpace gained by the fection of the fymphyfis pubis in extreme deformity of the pelvis, and the manifeft danger attending that operation, are circumftances fufficiently warrantable to preclude its ufe as a fubftitute for any of the above-mentioned modes of delivery. The Sigaultian operation frequently involves the fœtus in imminent danger when the diftortion is confiderable; and in fome inftances where the fection has been made, the confolidation of the facrum and ilia have been fo firmly united, that no adequate fpace could be gained by a divifion of the fymphyfis pubis for the extraction of the child, and delivery has afterwards been obliged to be terminated by the crotchet or Cæfarean operation; and it has been

doubted, and with ſufficient reaſon, whether the Sigaultian operation has ever been ſucceſsful to either mother or child, in caſes where the ſuperior aperture, from pubis to ſacrum, meaſured leſs than two inches and a half; hence will appear the inſufficiency of this operation, and the neceſſity of its being baniſhed in future from the practice of midwifery*.

"It is a matter of ſome conſequence for the accoucheur to diſcriminate, in caſes of diſtortion of the pelvis, between exoſtoſis and malacoſtion, as in the latter the bones will ſometimes give way conſiderably, either by the introduction of the hand, or the impulſe of extracting the child.

"Two caſes of this ſpecies of deformity have fallen under my care; in one of which, the projection of the lumbar vertebra and the connecting angle of the ſacrum were ſo much bent into the cavity of the pelvis, that on the introduction of the finger up the vagina a protuberance preſented to the touch, very much reſembling the head of the fœtus, pretty far advanced into the pelvis. On carrying the finger a little higher up, paſt the projection, I could aſcertain the head of the child; but on moving the finger round the projecting part, the diſtortion was ſo great, that the whole circumference, in any direction, did not exceed that of half a crown. This was on the 29th of April, 1792, at which time I delivered her with the crotchet, and the bones of the pelvis yielded conſiderably to the impulſe of the head of the fœtus, which acted like a wedge during the efforts of extraction; yet, notwithſtanding the pliability of the bones of the pelvis, and the debilitated ſtate of her conſtitution, ſhe recovered ſpeedily, and without interruption. On the 22d of February, 1794, I was in the neighbourhood where this poor woman reſided, and hearing of her being ſtill alive, I was led by curioſity to pay her a viſit, and, if poſſible, to obtain permiſſion to examine her per vaginam, which was readily granted. I found the rami of the oſſa iſchia at their junction with the rami of the oſſa pubis overlapped each other, leaving a ſmall opening under the ſymphyſis pubis, ſufficient to admit the finger to paſs into the vagina by that paſſage, and another aperture below, but rather larger, and parallel with the tuberoſities of the oſſa iſchia. From what I have been ſince able to learn, ſhe ſurvived this period near two

* "Amongſt the numerous evils attending the Sigaultian operation, the laceration or ſeparation of the ſacro iliac ſymphyſis is one of the moſt dangerous, and to obviate which, and at the ſame time allow a ſufficient ſeparation of the ſymphyſis pubis, appears no eaſy matter; yet, to accompliſh which, I have however thought, that if a vice could be fixed externally upon the hips of the woman, with a ſcrew ſo managed, that during the operation and ſubſequent treatment no more ſpace ſhould be allowed to take place than what was ſufficient for the extraction of the fœtus, by that means the injury in queſtion would be in ſome meaſure obviated."

years, at which time ſhe was become ſo crooked, that her breaſt and knees were almoſt in contact with each other, and after her death it was with difficulty ſhe could be put into the coffin. This woman bore nine children, and died in the thirty-ninth year of her age: I attended her in the preceding labour to that above mentioned, which caſe was lingering and tedious; however, I ſucceeded by terminating the delivery with the lever, and preſerved the life of the child. The other caſe of malacoſtion occurred to me in this town, about three years ago; the woman was in a dying ſtate before I was conſulted. On examination, I found the pelvis very much diſtorted, and ſuſpecting the deformity to ariſe from a ſtate of malacoſtion, I was induced, from the circumſtances of the preceding caſe, to attempt delivery; and this more particularly, as the poor woman expreſſed an earneſt deſire to be releaſed from her preſent burthen, rather than die undelivered. On enquiry, I learned that ſhe had only juſt completed the ſeventh month of geſtation; this ſtage of prematurity induced me to attempt to turn the fœtus, and deliver by the feet, by which means I might give the child a greater chance of life; but with reſpect to the mother, there was not the leaſt proſpect of her ſurviving delivery long. The os uteri being dilated, I accordingly introduced my hand, but the apertures of the pelvis were ſo much diminiſhed in their dimenſions, that it was with conſiderable difficulty; however, I ſucceeded, and delivered the woman of living twins; ſhe died in about twelve hours after, and the children did not ſurvive their birth many days. Having obtained leave to inſpect the body afterwards, I found the dimenſions and ſtructure of the pelvis as follow: The conjugate, or antero-poſterior diameter, from the ſymphyſis pubis to the projecting angle of the ſacrum, meaſured two inches and a half; and the antero-poſterior dimenſions on each ſide of the ſacro iliac-ſymphyſis, between theſe two points, were, in ſome places, a few lines more than two inches and a half; from which it is obvious, that the form of the ſuperior aperture of this pelvis had a triangular appearance. The rami iſchii approached ſo near each other, that the ſpace left betwixt them would ſcarcely admit one finger; and on the introduction of the hand, when proceeding to turn the fœtuſes, theſe bones receded from each other very conſiderably; and the ſame effects were obſervable in the ſuperior ſtrait. The ſpongy nature of the bones of this pelvis were alſo manifeſted, by having very little cretaceous matter in their ſubſtance, and their texture was ſo ſoft, that they were eaſily cut with a knife. Many advantages, I am confident, may reſult from an accurate knowledge of the diſeaſes and ſtructure of the bones of the pelvis prior to delivery; it is, I am perſuaded, from a want of this information, that the Cæſarean operation has ſo often proved fatal in this country, for there is reaſon to ſuppoſe,

that most of the women on whom that operation has been performed in this kingdom, have been afflicted with malacostion, and consequently in an irrecoverable state, independent of any injury inflicted by the operation itself; and perhaps, if the nature of the disease had been more clearly understood, delivery per vias naturales might, in some instances, have been accomplished with safety to the child, without having recourse to any other mode of delivery; and in these cases, where malacostion has made those dreadful ravages in the female constitution, beyond which the art of medicine has hitherto fallen short of re-establishing, it would be a nugatory practice, when attempted only with the view of preserving the life of the mother, to have recourse to either the Sigaultian operation or the Cæsarean section, as the woman would inevitably die, even if exempt from a a state of gestation. If we advert to the numerous cases of Cæsarean section performed on the continent, compared with those of this country, it will be obvious, that the comparative fatality has been owing to this disease pre-existing to the operation; for, in no instance where the Cæsarean operation has been performed in this country, has it proved successful to the woman, except the case of Jane Foster, on whom* I performed the Cæsarean operation with success, at Blackrod, in Lancashire, a few years since; in which case the operation became necessary, on account of a deformity of the pelvis, incurred by an accident prior to a state of gestation, and not from any constitutional disease. The failure of success attendant on the Cæsarean operation betwixt this and a neighbouring nation, is more ascribable to constitutional disease, which those women had laboured under in this country, who have undergone the operation, than to any difference of climate or mode of operating.

"When premature delivery is attempted, with a view of superseding the Cæsarean section, it can only become necessary when the dimensions of the pelvis are such as preclude every other mode of delivery per vias naturales; upon this ground the practice will be confined to the embryon state, or at least soon after it has acquired to that of the fœtal period. The solicitude of the accoucheur in this extreme degree of distortion of the aperture of the pelvis is wholly directed to the preservation of the life of the mother, as every endeavour within the limits of our art, when tending to preserve the fœtus in these situations, will be abortive; and how far the morality of the practice may

* Vide Medical Records and Researches, p. 154.

be justifiable, when performed with the view of preserving the life of the mother, and sacrificing that of the fœtus, is not a matter easily determined; the well-known aptitude inherent in a woman to conceive under these circumstances, and the number of fœtuses eventually destroyed with the intent of preserving the life of the parent, are incidents of the utmost importance to the community, and claim a proportionate share of consideration from every accoucheur concerned on these unfortunate occasions. In a situation so depending, is the accoucher excusable who tacitly complies with the requests of the mother, and voluntarily sacrifices a number of immature fœtuses with a view to her own preservation? As the Cæsarean operation in this situation may be made a matter of choice, may it not be allowable for the mother to exercise her judgment on the occasion? In certain cases, where the distortion of the pelvis is not very considerable, it is a practice adopted by some practitioners, as soon as the hand is admissible into the uterus, to return the presenting head of the fœtus, and deliver by the feet; how far this mode of practice may be justifiable I cannot pretend to say, as I am at a loss to conceive how any material advantage can be obtained by reversing the head, except it be where the uterine efforts are too feeble to accomplish the exit of the fœtus in a natural presentation, and where the advantage gained arises from the superior degree of power excited by the accoucheur over that of the uterus. In cases of this nature, and where the diameter of the superior aperture measures no more than three inches from pubis to sacrum, the head of the fœtus will generally, by the repeated action of the uterus upon its body, be forced a certain distance into the brim of the pelvis; when this is accomplished, and the head is ascertained to have advanced one-third within the superior aperture, it will be advisable to attempt delivery with the lever; for I have, in a few instances, succeeded with perfect safety to both mother and child with this instrument, even in cases where the crotchet has been used in the preceding births; hence will appear the advantage of waiting till the head of the fœtus is become so far advanced in the pelvis, that the lever is admissible, rather than involving the life of the child in unnecessary danger, by the implicit act of turning and delivering by the feet; a practice, even in the most promising situations, always attended with danger to the fœtus, and which has not hitherto been explicitly made clear by authors.

" Another situation wherein premature delivery has been adopted, is in cases of habitual miscarriage at a certain period of gestation, beyond which the fœtus is supposed to die. The practice of inducing premature labour while there remains a prospect of the fœtus being alive, will involve the accoucheur in much

ambiguity, particularly as the exact date of impregnation cannot clearly be ascertained, nor can we altogether obtain a certitude of the life of the foetus in utero, or whether the woman might not go to her full reckoning, till the art of midwifery has arrived at that acme of perfection, competent for the acquiring of the knowledge of these data. I think no one excusable who attempts this species of delivery, as instances are not wanting, where, after a number of periodical immature births, the woman has, at length, gone to the full period of nine months, and become mater familias.

"Authors appear divided in opinion respecting the danger incurred upon the mother, by exciting premature labour; the parity of hazard which results from this species of birth, on the score of the woman, at the period of seven or eight months, will vary according to circumstances, when contrasted with the event which will follow the termination of a labour at full time, and where the pelvis is distorted to the degree which I have fixed upon as indicating this operation.

"Were we to form an opinion on the event of a miscarriage at the above-mentioned period, we might be led to conclude, that little danger to the mother would follow this mode of delivery; but as the uterus is an organ in no respect governed by the will, and the efforts of that viscus are most regular when left uninterrupted, therefore no comparison will hold good betwixt a premature delivery and one artificially produced, nor betwixt one at the full period of pregnancy where the pelvis is well formed.

"An objection of much weight against this operation will naturally impress the mind of every humane accoucheur, namely, the difficulty of secrecy by which premature labour is effected; for I am firmly persuaded, if ever the method should be divulged amongst a certain class of individuals, it will soon become too generally known, and the abortive attempts will be innumerable; this will doubtless defeat the intention of the operation, and lead to a crime of a most cruel and inhuman nature."*

We have thus far considered the question of exciting premature labour, as a means of effecting delivery, under circumstances which seem to justify the attempt. It may not be amiss to shew next the dreadful mischiefs which may result from it, when ignorant or unprincipled accoucheurs employ it with a view to save themselves the fatigue of a long attendance. A stronger instance can scarcely be adduced than the following case of Laborious Parturition, with the consequences, described in the Memoirs of the Medical Society of London, by Mr. Wilkinson, of Sunderland.

"In the month of July, 1748, Elizabeth Lawrence, a married woman, low of stature, but of a good and healthy constitution, then thirty-two years of age, fell in labour of her first child.

The preſentation was natural, and the membranes had broken early on the ſecond day: this ſhe obſerved was occaſioned by the rude examinations of the midwife then attending.

On the afternoon of the third day ſhe became greatly exhauſted, the pains having left her; the child's head had advanced pretty early into the cavity of the pelvis, in which poſition it ſtill remained, without being much altered by the pains.

From the beginning of the labour, except on the firſt day, ſhe had made no water. The cuſtom, which at that time was in uſe, and ſtill prevails among the common people, of drinking large quantities of ſpirituous liquors in their gruel, with a view to promote labour pains, had greatly increaſed the ſecretion of urine; her abdomen became ſore and greatly diſtended. Unfortunately no notice was taken of this by the gentleman called to her aſſiſtance, of courſe the introduction of the catheter was neglected.

The ceſſation of the pains, narrowneſs of the pelvis *, and impracticability of applying the forceps, ſeemed to render it neceſſary to open the child's head. This, it ſeems, was literally the caſe, from the patient's deſcription of the long ſciſſars, and other inſtruments.

After ſome degree of exertion the head was brought forth; yet the grand difficulty, occaſioned by the ſhoulders, required the united aſſiſtance of two females to that of the accoucheur: at length, by repeated efforts for the ſpace of two hours, the delivery was at laſt effected; but, at the very inſtant the ſhoulders protruded, ſhe felt ſomething give a crack within her, and immediately a ſudden guſh of water followed, equal to four quarts, or upwards. The abdomen inſtantly ſubſided, and the patient felt herſelf eaſy. The placenta followed, a very ſhort time afterwards, with little or no hemorrhage.

Being put to bed, ſhe found herſelf very wet, her urine continuing to run off conſtantly, ſo that a great number of cloths were neceſſary to abſorb the moiſture.

On getting up two days after, for the purpoſe of having her bed made, ſhe felt at that time an inclination to make water, but was ſurpriſed that it came away in an involuntary manner, and that ſhe had loſt the power of retention.

On the third or fourth day, ſhe found herſelf much worſe, being ſeized with rigors, accompanied with heat, thirſt, and reſtleſſneſs; the whole of the parts of generation internally, as well as the external labia, became much inflamed and tumefied. Suppuration next followed, with a conſiderable diſcharge of fœtid matter from the vagina, and external parts; many ſloughs were

* On diſſection the pelvis appeared ſmall.

thrown off, one of which was so large as to induce the gentleman attending to suppose it the urinary bladder. The swelling having by this time subsided, and the parts being greatly denudated of their covering, the smarting occasioned by the acrimony of the urine became more severe, frequently occasioning a troublesome hæmorrhage. Strong uterine contractions, which she compared to labour pains, coming on at the end of a fortnight, produced a prolapsus as large as her fist. In short, after a variety of sufferings, she found herself, at the expiration of six weeks, so much better, as to be able to walk about the house, and get to the door; but the constant dribbling of urine and prolapsus vaginæ still remained. Her situation was the more distressing, as the stools, particularly when soft, passed from a communication through the rectum into the vagina. Several attempts were made to reduce the prolapsus, but the irritable state of the parts, and contractions of the uterus, always prevented her from using a pessary.

After the expiration of three years, she was attacked with what she called grinding pains in her belly, back, and loins, accompanied with excessive sickness and retching; for which she was bled, and the menses coming on soon after, she found herself relieved: the time of their continuance was three or four days.

Another year being fully completed, she was taken ill as before, but became better by bleeding, and the return of the catamenia, which continued upon her a whole week. Three weeks afterwards they again returned, but from that period entirely left her.

Her state of health, after this, was somewhat tolerable; now and then she was attacked with pains in the back and loins; sometimes she was seized with diarrhœa, accompanied with frequent tenesmus, more particularly after being costive.

The prolapsus vaginæ became habitual, but was much diminished in bulk; sometimes she could reduce it with her fingers, but observed, that it never continued up longer than a quarter of an hour at a time. Among the variety of means made use of as an external application, she found the greatest benefit from alum water.

In this deplorable situation she lived till February 2, 1789, being nearly forty-one years after her misfortune; at which time she died, at the advanced age of seventy-three.

"It was with the greatest difficulty," says Mr. Wilkinson, "that I obtained leave to open her body; but at length being allowed, I removed the whole contents of the pelvis as low as the anus and os externum. On examination of the parts, I found a communication between the rectum and vagina sufficient to admit my thumb to pass. The fore part of the vagina, the poste-

rior surface of the bladder, just below the opening of the ureters, as also the whole of the urethra, were gone, and the remaining part of the anterior surface of the vagina adhered across the os tincæ to the posterior surface; so that the os tincæ was wholly obliterated; and on introducing my finger into the vagina, it was conducted forward to the fundus of the bladder, which was pretty perfect.

"The left Fallopian tube had a tumor adhering to it about the size of a moderate golden pippin, and seemed full of fluid; but I did not open it *. The ovaries seemed quite sound, as well as the uterus; the rectum appeared diseased in its internal coat.

"From a review of the case, and further information obtained from the patient, there is great reason to suppose her labour was brought on prematurely.

"The too early rupture of the membranes not only prevented the gradual dilatation of the os uteri, and external parts, but, by lessening the bulk of the uterus, perhaps forced it too soon in contact with the pelvis and surrounding parts; hence, the order of nature being deranged, and the abdominal muscles prevented from co-operating with the action of the uterus by the over-distention of the bladder, the pains became not only irregular and less powerful, but the patient's strength was soon exhausted.—How far the early emptying of the bladder by the catheter might not have contributed to restore the contractile power of the uterus so as to have effected the delivery, I will not pretend to determine; yet certain it is, that most of the accidents which took place, particularly that of the laceration of the bladder, would have been prevented, and the delivery rendered much easier and safe.

"The succeeding inflammation, and large suppuration, which took place after the delivery, are not at all to be wondered at when every thing is properly considered. Hence it follows, that, in all those cases where the use of instruments seems necessary, great skill, as well as a careful attention to what may appear of the most trivial nature, ought never to be neglected.

"In a consequent point of view, the case I have related is indeed truly curious; the wonderful power in the constitution, by enabling this patient to support life to so great an age, under the pressure of such a train of accumulated injuries, seems not only astonishing, but affords us a convincing proof of the inexaustible resources of nature.

"Although accidents of this nature are by no means uncommon—and what may not be expected from an unskilful use of instruments, or imprudent efforts to accomplish delivery?—yet I

* The parts are in Mr. Hunter's Museum.

believe there are few cases of this kind, whose catastrophes have been so lenient, or prolonged, or where a more ample field for examination and speculation has been afforded."

CHAP. VI. OF THE FORCIBLE DELIVERY OF THE PLACENTA.

We have, in a former chapter, spoken in general terms of the necessary management of the after-birth in common, and even in difficult, cases. The subject, however, is of extreme importance to accoucheurs, and one, indeed, on which they are far from unanimous. Dr. Denman's great experience entitles what he has written on it to peculiar attention, and on that account we shall extract, from the different sections of his excellent work on midwifery, such parts as appear to be most interesting.

"In the course of ten or twenty minutes," says the doctor "or a longer time, after the birth of the child, sooner or later, according to the condition of the patient at the time of her delivery, the action of the uterus returns for the purpose of expelling the placenta and membranes, which collectively have the common name of secundines, or after-birth. This action is indicated by pains, in all respects like those the patient had before the child was born, excepting their degree. When these pains come on, it is customary to take hold of the funis, by which, if we pull slightly, the evacuation of the placenta out of the uterus will be forwarded, without the risk of doing any kind of injury to the uterus. The placenta and membranes formed a complete lining to the uterus: but the placenta coming away first, and then the membranes, the whole is usually expelled in an inverted state; yet not always, as the separation of the placenta is in some cases so speedy, that it drops into the vagina, and pushes the membranes before it. But though the placenta is generally expelled in a short time after the birth of the child, and with the return of a few pains, it is sometimes retained on account, 1st. of the inaction of the uterus; or 2d. of the irregular action of the uterus; or 3d. of a scirrhous adhesion of the placenta to the uterus. It may be retained beyond the usual time, without any hemorrhage, but whenever there is a discharge of blood, the whole or a portion of it must have been previously separated; and the hemorrhage may continue or increase, or cease and return in these cases, till the placenta is extracted or expelled. Every discharge of blood at this time, properly speaking, is a hemorrhage; but to this term, together with the other parts of the definition, we annex the idea of such a loss of blood, as, by its continuance or degree, may be apprehended to occasion danger, which we are

ever to bear in mind; or on every flight difcharge of blood, we might be led to make unneceffary attempts to extract the placenta.

"A very ftrenuous and long-continued exertion of all the powers of the conftitution is often required for the expulfion of the child. Thefe powers, though generally adequate to this effect, fometimes fail before it is accomplifhed. But experience having fhewn that difficulties, to our apprehenfion infurmountable, are very frequently overcome by the natural efforts, both reafon and humanity difcourage all hafty determinations to purfue fuch meafures as may affect the fafety of the mother or the child. But as there is a leaven of imperfection in all human actions, animal as well as moral, we may fometimes be led by the moft commendable motives to defer that affiftance which any particular cafe may require fo long, that after the birth of the child the patient may be in fuch an exhaufted ftate, and the uterus fo completely divefted of all power of further action, that it is neither difpofed nor able to feparate or eject the placenta; and fhe is fcarcely able to fupport the neceffary confequences of her delivery. The mere debility of the patient is therefore often a powerful reafon why we ought to wait, without making any attempts to haften the feparation or extraction of the placenta; as an immediate feparation, natural or artificial, would render her ftill more exhaufted and feeble, and greatly increafe the danger arifing from that debility which before exifted. Sometimes alfo, when a labour has gone on with great activity, there is, for a confiderable time, and from the moment of the expulfion of the child, even though the labour may not have been very fatiguing or flow, a total inaction of the uterus, for which no reafon can be affigned. But if the time which paffes between the birth of the child and the expulfion of the placenta be employed in compofing the patient's mind, in cooling her when overheated, or in fupplying her with proper cordials when much fatigued and wearied with the preceding circumftances, in fhort, in reftoring her to her natural ftate, it generally happens, and we may reafonably expect the action of the uterus to return, and make its efforts to throw off the placenta in the ufual manner, though more time may be required. But during this time of waiting for the action of the uterus to return, fhould a hemorrhage come on, we muft apply ourfelves to the ufe of thofe means by which the feparation and exclufion of the placenta may be forwarded; there being (in a cafe of hemorrhage equally urgent) as juftifiable a reafon for the removal of the placenta, when that is retained, as there was for the extraction of the child. But every difcharge of blood is not a fufficient reafon for the introduction of the hand, or for the artificial extraction of the placenta, as fome lofs of blood moft frequently precedes, and always accompanies, both its feparation and exclufion. We muft therefore

form a judgment of the necessity of extracting the placenta, by the opinion we entertain of the hemorrhage being so profuse as to endanger the life of the patient by its continuance or probable increase. Sometimes also coagula are discharged in considerable quantities, which, from their appearance, may be suspected to have been formed long before labour, by an effusion of blood into the ovum, from the rupture of some vessel which ran over the surface of the placenta; which coagula do not indicate any danger. It is not exactly in order, but it must nevertheless be observed in this place, that when I have been attending women, who were prone to violent hemorrhages after the birth of the child in former labours, I have made it a rule to keep them in an erect position, till the waters were discharged by the spontaneous breaking of the membranes, and the child was on the point of being born. By this method it appeared clearly to me, that the uterus acted more favourably, the placenta came away more naturally, and the quantity of blood lost was very much diminished."—

What follows is more immediately to the purpose of the present chapter. The doctor says, "When the placenta is not separated or ejected in due time after the birth of the child, with or without a hemorrhage, means must be used for the purpose of its exclusion or extraction. If there be no hemorrhage, or none of importance, it is always better to wait than to interfere, because slight attempts to extract the placenta by pulling by the funis may be just sufficient, by loosening a portion of the placenta, to occasion or increase a hemorrhage, and not equal to the extraction of the placenta; and such conduct is a very frequent cause of a degree of hemorrhage, which may lay us under the necessity of introducing the hand into the uterus, in order to bring away the placenta, which operation might not otherwise have been required. But after a certain time, which is too indefinite a term if we were authorised to use one more precise, but certainly not within one hour after the birth of the child, unless we are compelled by hemorrhage or some untoward symptom, gentle means are to be used to favour its exclusion; and the most gentle must be first tried, as by giving and frequently repeating some actually warm and temperate cordial, which may renew the disposition in the uterus to act; by change of position, or by making a moderate pressure with the expanded hand upon the abdomen to aid the action of the uterus; or by pulling very moderately by the funis, to try whether it be disposed to come away. As the term moderate has no precise meaning, and what I call violent may by another be called moderate, we will say that so much force is on no account to be used in pulling by the funis, as to incur the risk of tearing it from the placenta, or of inverting the uterus: and that it is better to make it a general rule, to prefer the introduction of the hand into the ute-

rus, to ſeparate and bring the placenta away, than to incur the hazard of either of thoſe accidents. It is, however, to be obſerved, that when the hand is introduced for this purpoſe, there is not always a neceſſity of acting; for the very irritation thereby occaſioned will often excite the uterus to its natural action, and the placenta be both ſeparated and expelled, as will be recollected by every one accuſtomed to this operation. But the hand ought never, on any account, to be introduced into the uterus, except as a matter of neceſſity, and then with the utmoſt care and tenderneſs; and when introduced, ſhould never be withdrawn, till the end for which it was introduced is, if poſſible, accompliſhed.

"In writings, and in converſations on this ſubject, the introduction of the hand, for the purpoſe of bringing away a retained placenta, is often mentioned as a ſlight thing; but I am perſuaded, that every perſon who attends to the conſequences of the practice will think it of importance, and that, if poſſible, it always ought to be avoided.

"To promote the ſeparation and excluſion of the placenta, the application of the half-cloſed hand to the abdomen, ſo as to make a moderate preſſure, is ſometimes of uſe by aiding the uterus in its contraction; but this aſſiſtance cannot be given in the worſt caſes, that is, when the uterus is not at all contracted, or contracted irregularly. The reſpiration of the patient has alſo an evident effect upon the uterus and placenta, of which we ſhall be ſenſible, if we retain the funis in our hand, in the act of exſpiration, when it deſcends, and in the act of inſpiration, when it is ſomewhat retracted. By ſupporting the funis with juſt ſo much force as will prevent its retraction in the act of inſpiration, we ſhall ſoon be ſenſible that the funis is lengthened, which will prove that the placenta is deſcending; and the purpoſe of extracting the placenta will be completed, without the uſe of any other means; but this method requires much time and attention. Sometimes alſo the excluſion of a deſcending placenta may be favoured by preſſing it, with one finger carried along the funis, towards the ſacrum, in ſuch a manner, as to bring down an edge inſtead of the whole maſs; but this is not the caſe of which we are ſpeaking.

"In all caſes of dangerous hemorrhage, when the placenta is retained, it was ſaid to be equally juſtifiable and neceſſary to extract the placenta, as it was to deliver the woman of her child under the ſame circumſtances. But this general rule requires explanation, and ſome ſkill in the application. When there is a preſent hemorrhage, ſo important as by its violence or continuance to threaten danger, the placenta ought to be immediately extracted. This is not an opinion, but a rule of practice. But if there have already been a hemorrhage, ſo profuſe as to occaſion danger, and the common conſequences of loſs of blood, as fainting, and the like, have already followed;

the placenta ought not then to be extracted, nor the patient disturbed, nor any change made, till ſhe is ſomewhat revived from her extreme debility; as the danger would be thereby increaſed, and the patient die, during or immediately after the operation, as I have ſeen and known in too many inſtances. In other words, the extraction of the placenta is to be conſidered as a remedy for a preſent or an apprehended dangerous hemorrhage, but cannot remove the effects of one which has already ceaſed.

"In caſes alſo in which there is no hemorrhage, if the placenta be not ejected, or if none, or but very feeble efforts be made by the uterus for that purpoſe, a time will come, when we muſt determine upon its extraction, or leave it behind; and the latter being unſafe and unjuſtifiable, the mere retention will be ſufficient authority for us to extract it. Upon this point there can be no diſpute, except as to the time, and we will ſay, leaving the matter at large, for the exerciſe of individual judgment, that, if the placenta be not expelled at the end of four hours from the birth of the child, it is generally wiſe to determine upon extracting it; and the determination of chooſing that time is, I believe, to be founded on the opinion, that the parts have not cloſed ſince the expulſion of the child. I can, however, recollect many examples of a retained placenta, without a hemorrhage, to which I have been called at any time within twelve or even twenty-four hours after the birth of the child, in which the placenta has been very eaſily managed, when the exigencies of any caſe required it."

In this place Dr. Denman thinks it neceſſary to make another diſtinction. "Though the placenta," ſays he, "may be retained for many hours after the birth of the child, if we be convinced of ſome degree of deſcent, eſpecially if we can feel that part of it into which the funis is inſerted, we have no occaſion to be alarmed, or to hurry its excluſion, unleſs there be an exiſting hemorrhage. Then the placenta may be ſuffered to remain, till it is excluded by the action of the uterus, or as it deſcends, the moſt gentle aſſiſtance may be given, by pulling by the funis, to extract it; without any apprehenſion of danger, whether it be detained two, or even twenty-four hours, becauſe we have at all times, under ſuch circumſtances, an eaſy and certain command of it."

In his tenth ſection, Dr. Denman ſpeaks of the manner in which a forcible extraction of the placenta is to be accompliſhed.

"Whenever we have determined," ſays he, "upon the neceſſity and propriety of extracting the placenta by art, we muſt proceed in this manner. The patient being placed in a convenient poſition, as when we deliver with the forceps or vectis, and every thing in order, the funis, which is our guide, is to be held with a moderate degree of tightneſs. The external parts are uſually in ſuch a ſtate, as not to require much dilatation; but

if this should be necessary, it must be done tenderly, and in the manner before directed with the right hand or left, as may be found most convenient; as must also the os or cervix of the uterus, should either be contracted. When the hand is in the vagina, the funis is to be slowly followed into the uterus, which though in a state of total inaction before, may then be irritated to a sufficient degree of action, to separate and expel the placenta, without any further assistance on our part. But if the spontaneous action of the uterus should not come on, we must proceed with the hand to the placenta, which may either adhere with its whole surface, or it may be partly, or even wholly, separated and lying loose in the cavity of the uterus. Should there be a total adhesion, we must search for the edge of the placenta, on the outside of the membranes, cautiously distinguishing between the placenta and the uterus. When the edge of the placenta is raised, the further separation must be made with the blunt ends of the fingers, and the closer and firmer the adhesion, the slower the separation ought to be made; not proceeding rashly, or affecting dexterity, but giving our heads time to guide our hands, as if the operation were performed under inspection. By slow proceeding, and by demurring a short time if we meet with more than ordinary difficulty, the separation will be perfected; or, when the greater portion is loosened, if we grasp it slightly in the hand, and bend it backwards, the remaining part will often peel from the uterus, without trouble; but this requires much caution. Should the placenta be found partly separated, we must proceed in the same manner. But whether on the introduction of the hand we found the placenta separated, or whether it was necessary to separate it, we are not to extract it immediately, but to wait till the uterus begins to contract, and then to withdraw the hand including the placenta, more quickly or slowly, according to the degree of contraction; for the hemorrhage may not be occasioned because the placenta was retained, but because its retention, or some other cause, hindered the contraction of the uterus. If there be no action of the uterus whatever, it is of service to throw the fingers gently backwards against the sides or fundus of the uterus, to irritate and bring on its action, previous to our withdrawing our hand. But when the uterus is perceived to act, then gently withdraw the hand, till the placenta is brought into the vagina. Whatever motive induced us to introduce the hand to separate the placenta, when it is brought into the vagina, it ought to be suffered to abide there, till the patient is composed, and recovered from her fatigue, and till the uterus has had time to contract in such a manner, as to prevent the return of the hemorrhage, at least in a dangerous way. For many years I have made it a rule to leave the placenta, naturally or artificially separated, to abide in the vagina one hour, after it was voided out of

the cavity of the uterus; and I am convinced by this method there is an infinitely less chance of an ensuing hemorrhage, on its coming or being brought away, and less after-pain. For the blood discharged in consequence of the separation of the placenta usually forms into coagula, which are collected in the membranes as in a net, and the uterus is left perfectly void of any thing, which can become the cause of any considerable pain.

" With regard to those cases in which the placenta is retained by the irregular action of the uterus, there is generally some degree of hemorrhage, and often a very profuse one; though sometimes there is no discharge, or none of importance, only a retention of the placenta beyond the common time of its expulsion. When all the parts of the uterus act with equivalent force at the same time, the united action contributes to the expulsion of whatever may be contained in its cavity. But if one part, the inferior for instance, should act, when the other is at rest, a contrary effect might be produced. The forms, which the uterus may assume in consequence of this irregular action, are innumerable, but the most common is the longitudinal, which is produced when all the parts, except the fundus, act; or the hour-glass form, when the middle of the uterus only acts, by which it is divided as it were into two chambers or cavities. When it was the custom to bring away the placenta immediately after the birth of the child, three reasons were assigned for the practice; first, that it was a dead substance, without any power like that which was supposed to be inherent in the child; secondly, that it was an extraneous mass, which became pernicious every moment it remained; and, thirdly, that if not immediately extracted, it would be almost impossible to bring it away, the os uteri closing in such a manner, as absolutely to prevent the introduction of the hand for the purpose of extracting it. These opinions are proved to be groundless; for the placenta, we know, may remain many hours or several days without doing any mischief to the uterus; and the opinion of the os uteri closing so soon after the birth of the child is without foundation, as that seldom or never happens: what has been esteemed the natural closing of the os uteri being in reality an irregular contraction or spasm of some portion of the cervix, from which we are assured no harm, and little additional difficulty, can arise *.

* Scire enim est post natum infantem, in utero nullum reperiri tale os ut olim fuerat: sed ita omnino se res habet, ut in bursa nummaria, quæ loris transmissis constricta, rugosum os format; laxatis autem hinc vinculis, ubique æque lata est et expansa. RUYSCH. Advers. Anat. Dec. Secunda.

The tenth chapter of the second Decade is full of useful observations regarding the management of the placenta, given in very honest and animated language.

"When the uterus is contracted thus irregularly, as the placenta cannot be expelled, it muſt be extracted by art, whenever, on account of a hemorrhage, or of the time that is paſt ſince the birth of the child, it may be thought expedient or neceſſary. There is no way of judging of this kind or degree of contraction, unleſs by the uncertain information we may acquire by the application of the hand to the abdomen, till we introduce our hand into the uterus. Before this operation it is always proper to try whether the placenta may not be diſpoſed to come away by any of the gentle means before recommended. On the failure of theſe, and being fully convinced of the neceſſity, the hand muſt be conducted in the manner before mentioned, till we come to that part which is partially contracted, whether it be at the cervix, or in the cavity of the uterus. The hand muſt then be reduced into a conical form, in the way directed for the dilatation of the os uteri, or external orifice. Should the ſpaſm be in ſuch a degree, as to make a perfect cloſure of the uterus round the funis, one finger muſt be firſt inſinuated along the funis, and this being turned with a ſemirotatory motion, will ſoon make room for a ſecond, and ſo on, till all the fingers, in a conical form, may be admitted. The dilatation is ſometimes to be made in oppoſition to a very firm contraction, yet it muſt be done ſteadily and reſolutely, though not raſhly or violently. Before the hand is paſſed beyond the contracted part, this muſt be amply dilated, otherwiſe it will clip round the wriſt, and impede the ſubſequent part of the operation. When the contracted part is amply dilated, the hand muſt be carried forwards into what may be called the upper chamber of the uterus, in which the placenta is contained. Whether this be ſeparated wholly or partially, or be yet adhering, we muſt proceed according to the method before mentioned. Immediately upon the ſeparation of the placenta, the hand containing it is to be drawn out of the upper cavity, to that part of the uterus which was before ſo cloſely contracted, and held there, till, by the preſſure behind, we are ſenſible of the action of the fundus. The hand containing the placenta is then to be withdrawn by ſlow degrees, till it arrives in the vagina, where the placenta may be ſuffered to remain for one or ſeveral hours; or we may wait till it is wholly expelled by the pains, in order to avoid the hazard of a ſubſequent hemorrhage.

"When the placenta is either expelled by the action of the uterus, or extracted by art, it ſhould be a general rule to apply the hand to the abdomen afterward, that we may be aſſured the uterus is not inverted; but this method is not always ſatisfactory, for in one caſe, though the volume of the uterus was felt, apparently contracting properly, the inverting uterus, as it receded, was miſtaken for a regular contraction."

We are here appriſed that the natural attachment of the pla-

centa to the uterus is of such a texture and kind, as very readily to admit of separation. But if, that part of the uterus, to which the placenta adheres, should be in a scirrhous or morbid state, the placenta will partake of the disease. On the examination of the placentæ of different women, there are not unfrequently found morbid appearances, some being disposed to a putrid, others to a scirrhous or catilaginous state; while in others there is a degree of ossification in the vessels, and sometimes perfect concretions. The adipose substance often found upon the placenta, in large quantities, is not of any importance. "The difficulty of the separation," says Dr. Denman, "will depend partly upon the placenta itself, and partly upon the state of the uterus. When there is found, on the introduction of the hand into the uterus, an uncommonly firm adhesion of the placenta, a perfect separation will be extremely difficult, and perhaps sometimes impossible, without the hazard of doing direct injury to the uterus. There is no security in these cases, but by taking time in the operation, confiding chiefly in slow proceeding, both for accomplishing our purpose, and avoiding mischief. It has been said, that it is more justifiable to leave a portion of the placenta behind, than to continue very strenuous efforts to bring the whole away, as these may give unbearable pain, and become the cause of immediate or subsequent injury. It must be acknowledged, that it is always a very desirable thing to bring away the placenta wholly and perfectly, not only for the satisfaction of friends, but for the real good and interest of the patient. Even the membranes should be managed with caution; for though a portion or the whole of these might be left without danger, they occasion a fœtor in the discharges, and often so much pain as to create a suspicion of disease. But without meaning to give authority to negligence or misconduct, to rashness or violence, we may suppose a situation, in which we must submit to some evil, and in which all that is in our power is, to choose the least. There can then be no doubt, but that it is a less evil to leave a portion of the placenta behind, than to do any positive injury to the uterus, in striving to bring it away. For it has been found, when a portion of the placenta was left behind, that the hemorrhage has ceased and not returned, and that this portion far sooner decayed, or was more readily digested or expelled, than the whole. I once saw an instance of a whole placenta retained till the fifteenth day after the birth of the child, and then expelled with little signs of putrefaction, except upon the membranes; the whole surface, which had adhered, exhibiting marks of a fresh separation. The recovery of this patient was very fortunate, for I have seen several other cases of a similar kind terminate fatally. It is a conclusion generally made, though not always warranted, that, if a woman die with a portion of the placenta retained, her death

ought to be attributed to it; yet it should be considered, that there may have been previous disease in the uterus, and that the event may have been really occasioned by violent, though unsuccessful, attempts to bring it away, and not by the retention. Sometimes the danger of these cases is known to the practitioner only, who is obliged to act according to exigencies, for which he may not be particularly prepared; but if he have before acquired a just knowledge of the principles of the art, explain himself ingenuously, determine not rashly, and proceed slowly, he will not do any thing for which he can be justly blamed, and will generally be successful.

"The funis is commonly inserted about one third of its space from, or at the very edge of, the placenta, sometimes in the centre, and now and then the vessels branch off before it reaches the placenta; and the ease or difficulty, with which this may be brought away, somewhat depends upon the insertion of the funis. The chance also of tearing the funis away rests chiefly upon the force used to extract the placenta by it; yet if it be inserted fully into the placenta, and be in a sound state, the force which it can bear is infinitely greater than can be exerted without the hazard of inverting or doing other injury to the uterus. But if the funis be in a putrid state, or if the vessels branch off too soon, it may be torn away with a very small degree of force, as in the latter case it can only sustain what a single branch of the vessels can bear. Hence, in a cautious extraction of the placenta, we are sometimes sensible of a sudden yielding or jerk in the funis, which, if the same force be continued, will be repeated, till at length the funis comes unexpectedly away, and the placenta is left in the uterus, or in the vagina. Great circumspection and slow proceeding will usually prevent this accident; but if it should happen in our own practice, or we should be called to assist others, we must determine whether the case will allow of further waiting, or whether there be a necessity of bringing the placenta away immediately, by introducing the hand into the uterus. If there should be occasion, on account of hemorrhage or any other untoward circumstance, for the latter method, which, if consistent with the safety of the patient, ought always to be avoided, we may consider the inconveniences produced by the want of the funis, which, when it remains, serves as a guide to conduct the hand, and helps moreover to keep the uterus steady, and to bring down the placenta when separated. The former of these will not be of much consequence to a person accustomed to the operation; and the latter will be lessened, if an assistant make a judicious pressure upon the abdomen with both his hands. Some disadvantage will necessarily arise from this accident, we should therefore be careful to avoid it, when in our power; but though a little embarrassment may be occasioned, even when the placenta is in the vagina,

the importance of the disadvantages produced by the separation of the funis has, I believe, generally been overrated."

In the Medical and Physical Journal, Mr. Bartley writes on the delivery of the placenta, to which he is induced by the frequent disputes of practitioners on the subject. He states two cases which occurred to him in practice.

CASE I.—" On Sunday, April 20," says he, " I was called to Elizabeth Baker, of Westwood, a small village near this town, to attend in delivery. When I arrived, I found her standing with her back resting against the wall; and learned from the attendant women, on enquiry, that she had been in this erect position for some hours. Not being able to sit or even lie down without the greatest inconvenience, I concluded at the moment, from this information, that delivery was very near; I therefore placed her gently on the bed, and proceeded to examination. On attempting to introduce my fingers, I felt some resistance; and examining further, I found that the uterus and its contents were so far pressed into the vagina, that some part protruded a little through the os externum; a pain which immediately followed would have forcibly expelled, had not I made a considerable resistance with my hand. The os tincæ not being dilated to the compass of a shilling, I was convinced that delivery was for the present impracticable; I therefore attempted to return the uterus, and happily succeeded; and a copious evacuation of urine shortly supervened, which discharge had been suppressed nearly two days by the pressure on the meatus urinarius. I directed that she might be constantly kept in a horizontal position, and the bowels moderately open by occasional emollient clysters, an anodyne being now and then introduced. She thus continued a week without a recurrence of pain, prolapse of the uterus, or impediment in the alvine or urinary evacuations.

" On Monday the 28th, I was again called about one o'clock in the morning. On arriving, I found the child had been delivered, without assistance, about three quarters of an hour; that considerable hemorrhage had ensued, but had then ceased; and the placenta was not yet extracted. The woman being extremely weak, and considerably exhausted by the effusion of blood, I thought proper, as the hemorrhage had subsided, to wait some time before I attempted its extraction: but some slight pains recurring (which I hoped would effect its expulsion without difficulty), I made some efforts to bring it away, by gently drawing the funis; but in vain. On introducing my hand, I found a morbid adhesion had taken place near the fundus uteri. As the uterus had not much contracted, I desisted from further endeavours, considering the weakness of the patient, whose situation was rather perilous from recent exhaustion; her lips livid, pulse small, and her whole countenance pale and ghastly. I de-

termined to leave its expulsion to the efforts of nature, and waited with patience about four hours, contenting myself with gently straining the funis at the recurrence of every pain. By this time the patient became very importunate in her request to have it taken away at all events, being extremely anxious to be put into bed; I therefore, in compliance, again introduced my hand, and removed several large clots of blood which obstructed its passage; then cautiously introducing my fingers round the whole substance of the placenta, between it and the uterus, I gradually detached and brought it away entire. Slight hemorrhage succeeded, and repeated faintings, which were so alarming that I began to wish I had persisted in my original resolution of trusting the operation to the efforts of nature, which I doubt not would have been sufficient, had I not acceded to her impatience. By administering cordial, tonic, and volatile draughts frequently, she soon recovered, and was, in the course of a fortnight, able to leave her room without material injury or inconvenience."

CASE II.—"The second case is of Elizabeth Munday, residing at Avonclift, near the town. I was called on to attend her in labour, May 16. The presentation of the child was natural, and nothing material occurred prior to the delivery, which happened soon after my arrival. I did not intend to proceed to the extraction of the placenta until Nature evinced, by her efforts for its expulsion, that my assistance was necessary. But about ten minutes after the birth of the child, a hemorrhage ensued, which in a short time became so profuse as to greatly endanger the life of my patient. I then judged it expedient to attempt its delivery without further delay. I took hold of the funis, which was of a texture uncommonly slight, and drew it in the gentlest manner; but unfortunately, notwithstanding I proceeded with the utmost caution, it separated at the placenta. Although such an accident was new to me, I did not suffer alarm to conquer my circumspection. I cautiously introduced my hand into the uterus: and, as in the preceding case, gradually detached the placenta, which I brought away entire. Hemorrhage still continued, and I became extremely apprehensive for my patient's safety; but happily, by the application of wet cloths, &c. and supporting her occasionally with cordials, I succeeded in removing every alarming symptom, and she is now tolerably strong and healthy."

The former of these cases may tend to exemplify, that the placenta may be retained with safety a much longer time than is generally admitted; and the latter, that although a forcible extraction is sometimes necessary from circumstances, it may be easily effected without thrusting the fingers into the substance of the placenta.

CHAP. VII. Of HYSTEROTOMY, or the CÆSAREAN OPERATION.

SECT. I. *Of the* CIRCUMSTANCES *under which* HYSTEROTOMY *is deemed justifiable.*

WHEN the delivery could not be accomplished by other means, or when a woman died suddenly with a living child in her womb, an operation to preserve the life of the mother and child in the former case, and to save the child in the latter, has been recommended, and successfully performed, by different authors, and in different ages.

This operation is of ancient date; it is the *sectio Cæsarea* or *partus Cæsareus* of the Latins, and the *hysterotomia* of the Greeks. Whether it was ever successfully performed on the living subject amongst the ancients seems uncertain; but that it has been successfully practised by the moderns on various occasions, and in several different countries of Europe, there are so many authentic histories on record, that the fact will scarcely admit of doubt: but as this, like many other salutary institutions, has been much abused, and in many cases improperly and injudiciously employed (for some of those women who survived the operations were afterwards safely delivered of living children), the circumstances which render this operation necessary demand a very peculiar enquiry, viz.

1. A narrowness, or bad conformation of the bones of the pelvis.
2. Imperforated vagina, or contraction in the vagina, cicatrices, tumors, or callosities in the os uteri, &c.
3. The escape of the child through the uterus when torn.
4. Ventral conceptions.
5. Herniæ of the uterus.
6. The position or bulk of the child.

It will be necessary carefully to examine these different causes, in order to shew that they are by no means, in every case, sufficiently powerful motives for having recourse to it.

I. *Bad conformation of the bones of the pelvis.*—When the hand of the operator cannot be introduced within the pelvis, or, in other words, when its largest diameter does not exceed one inch and a half, this conformation is perhaps the only one which renders the Cæsarean operation absolutely necessary; happily, however, such a structure very seldom occurs in practice; and when it does, the accoucheur will readily discover it, by attending to the following circumstances, and to the common marks of a narrow pelvis. Wherever the capacity of the pelvis is so strait as not to admit any part of the child's head to enter, nor two fin-

gers of the accoucheur's hand to conduct the proper inſtruments to tear, break down, and extract the child piece-meal; in this caſe recourſe muſt be had to the Cæſarean ſection; an expedient, though dreadful and hazardous, that will give the woman and child the only chance of life; and which, if timely and prudently conducted, notwithſtanding the many inſtances wherein it has failed, may be performed with ſome probability of ſucceſs.

It is true, the ſucceſs of the operation in the city of Edinburgh, where it has been done five times, has proved diſcouraging, as none of the women had the good fortune to ſurvive it many days. This, however, is not the fault of the operation, but is to be imputed to the low, weak ſtate of the patients at the time, who had previouſly been ſeveral days in labour, and their ſtrength greatly exhauſted, before the operator was called. Delivery by every other means was utterly impracticable; the operation, though the event was doubtful, alone gave a chance of life; and three of the children by this means were extracted alive.

Mr. Hamilton, ſurgeon and profeſſor of midwifery in Edinburgh, having been an eye-witneſs of the operation the laſt time it was performed there, gives the following account of the caſe which fell under his obſervation.

Elizabeth Clerk, aged 30, had been married for ſeveral years, became pregnant, and miſcarried in the third month; the expulſion of the abortion occaſioned ſo ſevere a ſtreſs, as actually to lacerate the perinæum. Some time after her recovery, ſhe was irregular, afterwards had one ſhew of the menſes, again conceived, and the child, as ſhe imagined, arrived at full time. She was attacked on Monday the 3d of January, 1774, about midnight, with labour pains, which went on ſlowly, gradually increaſing till Saturday the 15th, when ſhe was brought from the country to the Royal Infirmary here. Upon examination, the pelvis ſeemed conſiderably diſtorted; but the body was otherwiſe well ſhaped, though of ſmall ſize; the os externum vaginæ was entirely ſhut up, nor could any veſtige of vagina be obſerved, nor any appearance of labia pudendorum: inſtead of this, there was a ſmall aperture at the ſuperior part of the vulva, immediately under the mons veneris, probably about the middle anterior part of the ſymphyſis pubis. This aperture (which had a ſmall proceſs on the ſuperior part, ſomewhat reſembling the clitoris) was no larger than juſt to allow the introduction of a finger; the meatus urinarius lay concealed within it: a conſultation of ſurgeons was called, and the Cæſarean ſection was determined on. Having had no ſtool nor voided any urine for two days, an injection was attempted to be thrown up; but it did not paſs, nor was it poſſible to puſh the female catheter into the bladder. Mr. William Chalmer was the operator in this caſe. At ſix in the evening, he made an inciſion on the left ſide of the abdomen in

the ordinary way, through the integuments, till the peritonæum was exposed; two small arteries sprung, which were soon stopped by a slight compression; the wound was then continued through the peritonæum into the cavity of the abdomen, when the bladder appeared slightly inflamed, much distended, reaching with its fundus nearly as far as the scrobiculus cordis: another unsuccessful attempt was made to pass the female catheter; at length a male catheter was procured, which was, after some difficulty, introduced into the bladder, and the urine evacuated to the quantity of above four pounds, high-smelled and fetid. This occasioned a necessary interruption for a few minutes, between making the opening into the abdomen and uterus; the bladder collapsing, the uterus, which before lay concealed, now came in view, through which an incision was made, and a stout male child was extracted alive; and immediately afterwards the secundines. The uterus contracted rapidly. After cleansing the wound, the lips were brought together by the quill-suture, and dressed superficially. The patient supported the operation with surprising courage and resolution; nor was there more than five or six ounces of blood lost on the occasion.

Being laid in bed, she complained of sickness, and had a slight fit of vomiting; but, by means of an anodyne, these symptoms soon abated: she was affected with universal coldness over her body, which also abated on the application of warm irons to the feet: she then became easy, and slept for four or five hours. Next morning, the 16th, about two o'clock, she complained of considerable pain in the opposite side, for which she was blooded; and an injection was given, but without effect; for the pain increased, stretching from the right side to the scrobiculus cordis; nor did fomentations seem to relieve her; her pulse became frequent, she was hot, and complained of drought. At 7 A. M. the injection was repeated, but with no better success; and eight ounces more of blood were taken from the arm; a third injection still failed to evacuate any fæces; the drought increased; and the pulse rose to 128 strokes in a minute. At 11 A. M. the pulse became fuller, and the respiration much oppressed. No stool nor urine passed since the operation. At 12 she was blooded again, when the siziness appeared less than formerly. She now took a solution of sal. Glauber, manna, and er. tart. at short intervals; she vomited a little after the last dose, had a soft stool, and voided a small quantity of urine. At 3 P. M. her pulse was 136, and she had another stool, when thin fæces were evacuated; she was then ordered two spoonfuls of a cordial anodyne mixture every second hour; the vomiting now abated; the pulse became smaller and more frequent; she passed urine freely; but the pain and oppressed breathing increased. At 7 P. M. her pulse rose to 140, and became weak and fluttering; she called for bread, and swal-

lowed a little with difficulty; her drought was intenſe; the dyſpnœa ſtill increaſed. She was now much oppreſſed, and began to toſs; the pulſe ſunk and became imperceptible; ſhe complained of faintiſhneſs, but on belching wind her breathing was relieved, and the pulſe returned, growing fuller and ſtronger: the pain of the ſide ſtill increaſing, twelve ounces of blood, very ſizy, were taken away; and two clyſters of warm water with oil were injected without effect. At 8 P. M. the pulſe became leſs frequent and ſmaller; ſhe complained much of the pain towards the ſcrobiculus cordis; her breathing was much oppreſſed; her belly was tenſe, and ſwelled as big as before the operation; her pulſe was now ſmall and feeble; ſhe looked ghaſtly; and expired a little after eight, twenty-ſix hours after the operation.

It is to be regretted that the relations would not permit the body to be opened.

Since the firſt certain accounts of the operation ſucceſsfully practiſed by a ſow-gelder on his own wife, in the beginning of the ſixteenth century, there are on record above ſeventy well-atteſted hiſtories, wherein it has been ſucceſsfully performed: for, of all the caſes related by authors, it has not proved fatal to the patient above once in ten or nine inſtances; which evidently ſhews the propriety of the practice, and probability of ſucceſs, both in regard to the mother's own recovery, and for certainly preſerving the life of the child. But it ſhould never be attempted, excepting in thoſe caſes only where it is abſolutely impoſſible to deliver the woman by any other means whatever; for there are pelviſes to be met with, where, without having recourſe to this operation, both mother and child muſt inevitably periſh: ſuch have occurred to many practitioners, who, from want of reſolution or from ill-founded prejudice, have allowed their patients to periſh from neglect, contrary to a well-known maxim in phyſic, That, in a deſperate caſe, it is better to employ a doubtful and even deſperate remedy, than to abandon the patient to certain and utter ruin. Such, for inſtance, is a caſe related by Saviard, of a girl aged 27, whoſe ſtature was only three feet, who came to lie-in at Paris, in the *Hotel Dieu*; every method but the operation was in vain attempted; both mother and child died. Mauriceau alſo relates the hiſtory of a woman who was left to die, where the aperture of the pelvis was ſo ſmall as not to admit the hand of the accoucheur. And, not to multiply inſtances, Mr. De la Roche gives a caſe where the woman had been ſeven days in labour: the child was ſaved by the operation; but the woman died the fifth day after, probably from its being too long delayed: the diſtance, in this ſubject, from the lower vertebra lumborum and os pubis, was no more than two fingers' breadth. The operation, when the neceſſity is evident, ought therefore to be early performed, that the patient, who from her make and conſtitution

is generally delicate and puny, may have every chance of recovery in her favour, without being exhausted by the fruitless efforts of a tedious and painful labour, as too often has been the case. On these occasions, the prudent accoucheur should call in the advice of his elder brethren of the profession, and, by his cautious and prudent conduct, avoid every cause of censure or reproach.

Exostoses from the bones of the pelvis is a species of deformity very rarely met with in practice, and which seldom or never takes place to such a degree as to render this operation necessary.

II. *Constriction, callosity, tumors*, &c. about the vagina or os tincæ.—The vagina and os tincæ are often affected with constrictions from cicatrices, with callosities and tumors; but it is seldom, if ever, necessary to perform the Cæsarean section on this account. Tumors in the vagina may generally be removed with safety, even after the commencement of labour, and delivery happily succeed; or it may be sometimes practicable for the accoucheur to pass his hand by the side of the tumor, to turn the child, and deliver. With regard to constrictions in the vagina, and callosities in the os uteri, there are many instances where, at the commencement of labour, it was impossible to introduce a finger into the vagina; yet the parts have dilated as labour increased, and the delivery terminated happily. At other times, the dilatation has begun during pregnancy, and been completed before delivery. There is a history, for instance, in the *Mém. de l'Acad. des Scienc.* 1712, of a woman whose vagina was no larger than to admit a common writing quill; she had been married at sixteen, and conceived eleven years after: towards the fifth month of her pregnancy, the vagina began to dilate, and continued to do so till full time, when she was safely delivered. Guilemeau dilated, and La Mott extirpated, callosities in the vagina and os tincæ, when the children were successfully expelled by the force of natural labour.

Harvey relates a case where the whole vagina was grown together with cicatrices; nature, after a tedious labour, made the dilatation, and a large child was born.

La Mott mentions his having delivered three women, who had not the smallest vestige of an orifice through the vagina to the uterus. Dr. Simpson cut through a callosity of an os uteri which was half an inch thick, &c.

Upon the whole, tumors in the vagina, or about the orificium uteri, may be safely extirpated without danger of hemorrhagy or other fatal symptoms, and the delivery will happily succeed; and if the vagina be impervious, the os externum shut up, or the labia grown together, the parts should be opened with the scalpel, rather than risk an operation, at best in the issue doubtful and precarious: an operation never allowable in such cases, and therefore universally improper in diseases or malconformation of the soft parts of generation. If the os externum be entirely closed,

if the cavity of the vagina be entirely filled up, or the paſſage conſiderably obſtructed by tumors, callofity, or conſtriction from cicatrice, and there is no reaſon to ſuſpect a fault in the pelvis, of which a judgment may be formed by the common marks of deformity, under ſize, or a ricketty habit, it is by much the beſt practice to open a paſſage through the vagina, and deliver the woman in the ordinary way. If there be no defect in the pelvis, the head of the child, or any other bulky part that preſents, will advance in this direction, till it meets with reſiſtance in the ſoft parts: thus the teguments will at length be protruded before the child's head, in form of a tumor, when a ſimple inciſion downwards to the perinæum, in the direction of the anus, will remove the cauſe of difficulty, by relieving the head; the child will afterwards ſafely paſs, and the wound will heal without any bad conſequence.

The ſtate of the pelvis, and progreſs of the labour in theſe caſes, may often be learned by the touch of the finger in ano.

III. *Lacerated uterus* is another cauſe for which this operation has been recommended.—The uterus may be ruptured from violence in making the delivery; or ſuch an accident may happen naturally, either from the croſs preſentation of the child in time of pregnancy, or in time of labour, when the pelvis is narrow: theſe caſes are generally fatal; and it is very ſeldom, if ever, that the life of the mother can be ſaved by the Cæſarean ſection, after the fœtus eſcapes through the torn uterus into the cavity of the abdomen; becauſe it often happens, that inflammation and ſphacelus has affected the parts of the uterus that ſuſtained the preſſure previous to the rupture; or, if otherwiſe, convulſions or other fatal ſymptoms ſoon enſue, from the quantity of blood, waters, &c. poured into the cavity of the abdomen.

When the child cannot be extracted by the natural paſſages, tremors, ſingultus, cold ſweats, ſyncope, and the death of the mother, for the moſt part, ſo quickly follow, that it will at leaſt ſeem doubtful, to a prudent, humane practitioner, how far it would be adviſable, after ſo dreadful an accident, the woman apparently in the agonies of death, raſhly to perform another dangerous operation, even with a view to preſerve the child, till he had waited till the mother either recruits or expires.

If part of the child be contained within the uterus, and the feet can be reached, the practice is to deliver by the orifice of the womb; but when the whole fœtus has eſcaped entirely without the uterus, the Cæſarean operation is recommended as the only means of preſerving both mother and child.

If the operation on this occaſion be ever allowable, it may be aſked,

1. At what time muſt it be performed?

2. Would it not have the appearance of inhumanity to have

recourse to this expedient immediately after the uterus bursts, when the woman is seemingly ready to expire, although it be the only time when there is a chance of saving the child?

3. In most cases where this accident happens, should the Cæsarean section be made, is it not highly improbable that the mother will survive so terrible a laceration?

4. For if it be done with a view to save the mother, in what manner is the extravasated blood, &c. to be evacuated from the cavity of the abdomen?

What seems to make cases of this kind unfavourable, when the accident happens in time of labour, is,

1mo, That here the parts, before rupture, in most cases, are in a gangrenous state.

2do, As the rupture is commonly towards the cervix, there is generally a much greater hemorrhagy, by reason of the slow contraction of the uterus at that place.

3tio, The uncertainty whether, or how long, the patient will survive it, seems also a considerable obstacle to the operation under such disagreeable circumstances, *Ne occidisse videatur, quem fors interemit.*

IV. *Ventral conceptions* is the fourth indication for this operation.— These are either in the ovaria, tubes, or cavity of the abdomen, and seldom arrive at great size; or are retained, very often a long time, without occasioning much complaint. The issue of these conceptions has also been no less various than extraordinary; for after being retained for a great many years in an indolent state, at length abscesses or ulcerations have formed, and they have been discharged through all the different parts of the abdomen.

Most women feel pain and violent motion at the time of ordinary delivery in these cases of ventral conception; if, therefore, the operation be ever necessary, now is the proper time to perform it. But in general, as the separation of extra-uterine fœtuses from their involucra may occasion immediate death in many cases, from the vast hemorrhagy that might ensue from the non-contractile power of the parts to which they adhere; unless they point outwardly, or excite the most violent symptoms, they ought universally to be left to nature.

V. *Hernia of the uterus* is seldom or never sufficient to induce us to perform the Cæsarean section, as the uterus is very rarely influenced in such a manner, that the orifice cannot be reached, and the delivery successfully made. Many instances are to be found among surgical authors, where deliveries, under such circumstances, have been happily performed, without having recourse to so hazardous an expedient. Thus Mauriceau mentions a case, where the uterus, in a ventral hernia, was pushed along with the intestines above the belly, and contained in a tumor of a

prodigious ſize; the woman, however, was delivered at the end of her time in the ordinary way. La Mott relates the hiſtory of a woman in a preternatural labour, whoſe uterus and child hung down pendulous to the middle of her thigh, but whom, notwithſtanding, he ſafely delivered: and Ruyſch gives a caſe where the midwife reduced the hernia before delivery; although it was prolapſed as far as the knee, the delivery was ſafely performed, and the woman had a good recovery.

VI. *The poſition or bulk of the child.*

Since the practice of turning the child and delivering by the feet, and the late improvement of obſtetrical inſtruments, this operation is never to be performed, on account of poſition, monſtroſity, or any other obſtacle on the part of the child.

Upon the whole, when the pelvis is faulty to ſuch a degree, that no inſtrument can be conducted to tear and extract the child, this perhaps is the only caſe wherein this operation ſhould be performed on the living ſubject. Inciſions through the teguments of the abdomen, to extract extra-uterine fœtuſes, or bones of fœtuſes, do not properly fall under the name of *Cæſarean ſection*, as that name implies inciſion of the uterus alſo.

When a woman advanced in pregnancy dies ſuddenly, either by accident or by natural diſeaſe, the Cæſarean ſection is recommended as an expedient to preſerve the life of the child. This is a very proper meaſure, provided the death of the mother be aſcertained; but ſometimes it is a very nice and difficult point to diſtinguiſh between a deliquium and death; and therefore the accoucheur on ſuch an occaſion muſt act with the utmoſt circumſpection. If the operation be delayed but a very ſhort while after the mother expires, it will probably be in vain to make the attempt; for, whatever fabulous ſtories may be related to the contrary, there are few authentic caſes of the fœtus of any animal ſurviving the mother, perhaps an hour; and therefore every thing ſhould be in readineſs to extract the child with all poſſible expedition, after the event of the mother's death. But, in ſuch caſes, the agonies of death often perform the part of labour, and the child is ſometimes thrown off *in articulo mortis*; or the os uteri is ſo much dilated, that there is eaſy acceſs to paſs the hand, turn the child, and deliver. Thus one ſhould be very cautious in having recourſe to this operation, even in the above circumſtances; which ſhould never be done,

1. Till the death of the mother be aſcertained beyond doubt;
2. Till the ſtate of the os uteri be examined;
3. Till the conſent of the relations be obtained; And,

Laſtly, It need not be undertaken, except where the mother dies ſuddenly, between the 7th and 9th month.

It is unneceſſary where the diſeaſe has been lingering; in ſuch caſes the child commonly dies before the mother.

When it is doubtful whether the child be alive or not, it may be

determined by applying the hand on the abdomen of the mother about the time of, and for a little while after, her death, when the life of the child will be discovered by its motions and struggling.

Thus having pointed out the different causes that determine this operation, it may be observed, that it is a frightful and hazardous one; and although performed successfully in a number of cases, yet, in many others, it has failed, and the woman has died either immediately or soon after. It should never, therefore, be undertaken but on extraordinary and desperate occasions; and then it is not only advisable, but incumbent, on every practitioner to whom such cases occur.

To conclude, it may not be improper to give a few directions with regard to the method of performing the operation on the living subject.

Having emptied the bladder, and evacuated the contents of the intestines with repeated emollient glysters, the patient being encouraged, with proper cordials, and every other requisite in readiness, she must be placed on a table or bed, with her left side gently raised with pillows or bolsters, and properly secured by assistants. An incision must be made with a common convex scalpel, beginning rather below the navel at the middle space between it and the spine of the os ilium, carrying it obliquely forwards towards this bone, so that the wound in length may exceed six inches. This external wound is to be carried through the common teguments of the abdomen till the peritonæum is exposed, when the operator should rest a little, till the hemorrhagy be entirely abated. He must then, with great caution, make a small opening through this membrane, introduce his finger, and upon this a scalpel (which is preferable to scissars), and with great expedition make a complete dilatation; he must now wipe away the blood with a sponge, press the omentum or intestines gently to a side, if in the way, and endeavour to discover to what part of the uterus the placenta adheres, that it may be avoided in making the incision. This may easily be known by a thickness and solidity in the part, which distinguish it from the rest of the uterus; it is still more easily discovered when the membranes are entire. The blood-vessels are less in number, and smallest in the middle and anterior part of the uterus, which therefore, if the placenta does not interfere, is the proper place for making the incision, which must be performed with the utmost attention, lest the child should be wounded: if the membranes are entire, more freedom may be used, and *vice versa*. The direction and length of the wound of the uterus must be the same with the external one. The child must now be quickly extracted, and the placenta carefully separated: these must be given to an assistant, who will divide the chord, and take care of the child, as the operator's attention must be wholly bestowed on the mother. The coagulated blood, &c. being removed by a sponge wrung out

of warm water (lest the uterus or intestines be protruded, which are very troublesome to reduce), the lips of the external wound must be quickly brought together, and retained by an assistant till secured by a few stitches; generally three will be sufficient: as many needles should be ready threaded with pretty large broad ligatures; the middle stitch ought to be made first; the needle should be introduced at a proper distance, *i. e.* about an inch and one fourth from the side of the wound, carrying it first from without inwards, and then from within outwards, securing, with a double slip knot, to be ready to untie, lest violent tension or inflammation should ensue; under the knot a soft compress of lint, charpie, or rolled plaster, should be applied, and the whole dressings must be secured by a proper compress and bandage. The patient must be afterwards treated in the same manner as after lithotomy, or any other capital operation.

Quæritur, To what cause is the unsuccessful event of this operation to be imputed? When the operation proves fatal, to what immediate cause are we to ascribe the death of the patient? Is it nervous, or uterine irritation, from cutting, that kills? Is it internal hemorrhagy, or the extravasation of fluids into the cavity of the abdomen? Or are not the fatal consequences rather to be imputed to the access of the air on the irritable viscera? This can only therefore be prevented by exposing these parts for as short a space of time as possible. Dr. Monro, the present anatomical professor at Edinburgh, in making experiments on young small animals, such as bitches, cats, frogs, &c. by opening the cavity of the abdomen, and tying the biliary ducts, remarks, that though a large opening into the abdomen be made by incision, if the wound be quickly closed and stitched, the animal will recover, and no bad consequences follow; but if exposed a few minutes to the air, dreadful pain soon comes on, which the creature expresses by the severest agonies; convulsions at last ensue, and death within four or six hours after the operation. On opening the abdomen after death, the whole viscera are found to be in an inflamed state, and universally adhering to one another. He has often repeated the experiment, and the same appearances as often take place.

May not the analogy here justly apply to the human subject? And, in performing the Cæsarean operation, should we not be very careful that the viscera be exposed as little as possible, and that the wound be covered with the utmost possible expedition?

SECT. II. CASES *in which* HYSTEROTOMY *has been performed*.

Besides the case cited in the foregoing section, Dr. Smellie records the following instances of the Cæsarian section performed on the dead, as well as on the living subject.

CASE I.—This was a case of flooding in which the woman died suddenly, and was opened immediately, in order to save the child.

"I was called," says the doctor, "by a midwife, to a woman who was attacked with a violent flooding; but she being unwilling that I should examine, and the discharge being stopped before I reached the house, I ordered a mixture of the *Tinctura Rosarum*, and laudanum, to be given as there should be occasion; and desired them to send if it should again return.

"She was within a fortnight of her full time; the discharge was sudden, in a large quantity, and soon stopped; she continued free all that day, till towards the evening; the flooding continued all night; and I was not called till next morning, when I found her excessively weak and low. Although she had no signs of labour, yet the os uteri was soft, and a little open, and something like either a coagulum of blood, or the placenta, presenting. Before I had time to put her in a position for the delivery, she fainted away, was thrown into convulsions, and died instantly. As there were none but the husband and nurse present, I immediately sent for an apothecary, who lived next door. All the by-standers being fully convinced of her death, I made a large opening into the abdomen, with a view to save the child. Though the woman was pretty fat, yet the parietes of the abdomen were thinner than I expected, from the large extension of the uterus. I then made a large opening in the uterus also, which was not a quarter of an inch thick. A large quantity of waters was immediately discharged into basons, in all about two quarts. I then extracted the child, which was large and plump, but had no signs of life, and seemed to have been dead several hours, by the stiffness of the joints. I now leisurely examined the uterus and secundines. The uterus and the woman's body seemed to be quite destitute of blood; for scarcely one drop appeared on opening the parts. I separated the membranes slowly, which adhered to the inside of the uterus. In this operation, I perceived little small filaments, like hairs, that were extended; and, in separating, some shrunk into the uterus, and some to the membranes. I found the placenta adhering to the lower part and left side of the uterus, and about three fingers' breadth of it lying over the os uteri. I then also separated the placenta, and found filaments about the size of hogs' bristles, shrinking in as the former. All this part of the placenta looked florid, but that which was disengaged, and over the os uteri appeared livid, and split in the middle, which probably was the occasion of the child's death, by allowing the blood to be discharged from the placenta. The woman had easy labours in her former children. The os uteri was thin, soft, and open to the breadth of half a crown. I dilated it with ease, which shewed that, if I had been sent for in the evening, she might have been safely delivered. The head presented; but in the hurry I did not then observe the position of the body."

Case II.—In this case the uterus was opened, and every thing appeared much in the same manner as the former. The woman was turned of forty, of a gross habit, and had never borne a child.

In the feventh month of her pregnancy fhe received a fall, that brought on a large difcharge, which, however, by proper management, was foon reftrained, though it commonly returned on the leaft motion or exercife.

"About the middle of the eighth month," fays Dr. Smellie, "I was called, when it had returned in larger quantity than before; but it diminifhed by degrees, and foon ftopped altogether. What feemed to me moft neceffary at that juncture, was to keep up her ftrength by a nutritive diet, confifting of the lighteft kind of food. But being apprehenfive of danger from her great weaknefs, I advifed the hufband to call in a phyfician, who approved of what had been done, and ordered the fame regimen to be continued. After this fhe went on tolerably well, having now and then fome fmall returns, though not fo much as to require any other method; for the delivery could not have been attempted with any probability of fuccefs, even although the difcharge had been in greater quantity, the os internum being clofe fhut, and extremely rigid. Two or three weeks before her full time, fhe was taken with flight pains, upon which I was called, and found the os internum opened about the breadth of a fixpence, and within it a foft fubftance, that felt like the placenta, or coagulated blood. As fhe had refted but indifferently the preceding night, was faint and weak, and had fome fmall returns of the difcharge, I defired a confultation with another of the profeffion, and the family being ftrangers in England, mentioned fome of the moft eminent in my own way. Dr. Sands was fent for, and he gave it as his opinion, that it was ftill proper to fupport her ftrength by broths and nourifhing food, and more fafe to wait until the flight pains fhould bring on the right labour, than to ufe any violence to deliver her immediately. I was again called about nine o'clock the fame night, when fhe was taken all of a fudden with frequent faintings, in one of which fhe expired, as I entered the room. This fudden alteration prevented me from making any attempt, and indeed, had not this event happened, I fhould have been afraid of her dying in the operation, becaufe of her grofs and weak habit of body. Cafes of this kind require the utmoft prudence and caution. I have faved many women and children by immediate delivery, when the patients were not very low and weak, or worn out with frequent loffes of blood, and when the difcharge happened all of a fudden, in a good conftitution, the parts being open, foft, and ufed to extenfion by a former birth; but when the conftitution is grofs, the parts rigid, and the patient weakened by interrupted floodings, I have always practifed the foregoing method, which has often been attended with fuccefs.

"As foon as all prefent were fatisfied that this perfon was dead, I opened her abdomen, and having taken out the child, examined the uterus. I found the placenta firmly adhering to its inferior and pofterior parts; about two fingers' breadth of its lower edge

was separated from the os internum, which it covered; and this was what Dr. Sands and I had felt in the morning. Having extracted the secundines, I tried with my hand to open the os internum from the inside of the uterus, which with great force I performed, not without tearing it about two inches on one side. By this it appears how difficult it is to dilate this part in women going of a first child, especially when they are pretty old. Indeed it is sometimes impossible to be done before they come to their full time, and even then, not until the parts are thin, soft, and largely opened by previous labours."

Case III.—In this case there was a flooding. The patient died, and the Cæsarian operation was performed immediately after. The woman was above eight months gone with her fourth or fifth child. She had got up, and fatigued herself pretty much in the morning, in consequence of which she was seized with pains in the back. She tried to make water, and all of a sudden was taken with a violent flooding, which almost filled the chamber-pot.

" Her midwife," says Dr. Smellie, " being sent for, desired they would call me immediately. When I came, the flooding was stayed. I endeavoured to examine, but could not reach the os uteri, on account of her shivering. As she was easier, and not much weakened, they would not allow me to persist in my endeavours. I told her friends the danger to which she would be exposed, if the flooding returned with violence; and exhorted them in that case to send for me immediately. In the mean time, as her pulse was full, I ordered ten ounces of blood to be taken from her arm, directing her to keep in bed, and take frequently two spoonfuls of the following mixture:

(No. 16.) ℞. Infus. rosæ rubr. ℥v.
Acid. vitrioli. dilut. gutt. x.
Syr. papav alb. ℥i. misce.

" Also that a linen rag, dipped in the following decoction, should be put up the vagina:

(No. 17.) ℞. Cort. granator.
Flor. balaustior.
Flor. rosar. rubr. aa ʒi.
Coque in aq. font. q. s. ad ℥iv. colaturæ, adde.
Alum. rup. ʒß.
Vin. rubr. ℥ii. misce.

" She was again attacked with the flooding about eleven at night, and sent for the midwife; and though she was not at home, they delayed calling me till about six in the morning. I felt her pulse, which I could scarcely distinguish: her extremities were cold; a cold sweat had spread all over her face and breasts; and she could scarcely speak. I immediately ordered her a cordial julep with tinctur. castor. and sp. salis ammoniac. and in the

mean time gave her ſome warm red wine. Her veſſels were ſo much emptied, that the flooding was ſerous and much abated. I ordered ligatures above the knees and elbows, and warm cloths and bricks to be applied to her feet and hands. All theſe ſteps were taken in order to recover her ſtrength and ſpirits before I attempted to deliver; but before my directions could be put in practice ſhe was taken with a violent convulſion, and expired immediately. I then propoſed to try to ſave the child, if alive, by performing the Cæſarian operation; a propoſal to which they agreed. In order to prevent reflections, and aſcertain that the woman was really dead, I ſent for the apothecary, and immediately opened the abdomen and uterus. Then I extracted the child, but felt no pulſation in the arteries of the funis umbilicalis; neither was there any pulſation felt at the heart. I rubbed the child's head with ſpirits, flapped the nates, and ſhook the body to give pain and make it ſhrink. A niſus of this kind, operating on the nerves, ſometimes ſtimulates the heart to contraction, and affords an eaſy admiſſion of the air, to ruſh into the lungs. I then tried to inflate the lungs by blowing in at the child's mouth; but all theſe efforts were to no purpoſe, though made in leſs than four minutes after the mother expired. The child was plump and full grown; the ſcrotum and lips were not livid; but the joints were a little rigid, a circumſtance which denoted that it had been dead ſome hours.

"I now examined more narrowly the following particulars: On opening the woman I found the parietes of the abdomen thin and tenſe from the ſtretching of the uterus. I made the inciſion with an armed lancet, which was the inſtrument eaſieſt procured, from the navel along the linea alba, to the oſſa pubis, through the integuments and peritoneum. The uterus, which was fully diſtended with the waters, appeared through the openings, and ſtretched the lips ſeveral inches from each other. I then opened the uterus, which was about three eighths of an inch thick; there ſeemed to be about three or four pints of water contained in the membranes. When I came to examine the adheſion of the membranes and placenta, I found the membranes adhering every-where to the uterus; and on ſeparating them ſlowly, obſerved every-where little ſmall filaments like hairs extended from the one to the other. The placenta adhered to the back, and lower part of the uterus. I introduced my finger up the vagina to the os uteri, which was opened about half an inch, and found the lower edge of the placenta covering it on the inſide, adhering all round it, and alſo firmly adhering all along the lower and back part of the uterus. This I ſeparated ſlowly from the uterus; and here likewiſe appeared filaments riſing from the one to the other, as in the membranes; but as large as hogs' briſtles. But there was a greater roughneſs or inequality, reſembling ſmall identations in

that part of the uterus, and not so smooth as where the membranes adhered. There was no red blood in the vessels to be seen, because the body was quite exhausted. Where the uterus was opened, there appeared the mouths of a great number of vessels, some of them half an inch in diameter. The flooding seemed to proceed from the position of the placenta over the os uteri, which always happens when the placenta presents first: The head of the child was turned down to the os internum."

It is here observed that Monsieur Lamotte, in book iv. chap. 2. mentions some cases from other authors, and gives several himself, in which the passage to the uterus was shut up by callosities. But he opened, and made way for the birth of the children, without being obliged to perform the Cæsarean operation.

CASE IV.—This appears in the Edinburgh Medical Essays, vol. v. art. 37. An instance of the Cæsarean operation, performed, with success, by a midwife, is described by Mr. Duncan Stewart, surgeon in Dungannon, in the county of Tyrone, in Ireland.

"The histories of the Cæsarean operation," says Mr. Stewart, "being so few, I send you the following. Alice O'Neal, aged about thirty-three years, wife to a poor farmer near Charlemont, and mother to several children, in January, 1738-9, was taken in labour, but could not be delivered of her child by several women who attempted it. She remained in this condition twelve days; the child was thought to be dead after the third day. Mary Donally, an illiterate woman, but eminent among the common people for extracting dead births, being then called, tried also to deliver her in the common way: and her attempts not succeeding, performed the Cæsarean operation, by cutting with a razor first the containing parts of the abdomen, and then the uterus; at the aperture of which she took out the child and secundines. The upper part of the incision was an inch higher, and to one side of the navel, and was continued downwards, in the middle betwixt the right os ilium and the linea alba. She held the lips of the wound together with her hand till one went a mile, and returned with silk and the common needles which taylors use. With these she joined the lips in the manner of the stitch employed ordinarily for the harelip; and drest the wound with whites of eggs, as she told me some days after, when, led by curiosity, I visited the poor woman who had undergone the operation. The cure was completed with salves of the midwife's own compounding.

"In about twenty-seven days, the patient was able to walk a mile on foot, and came to me in a farmer's house, where she shewed me the wound covered with a cicatrice; but she complained of her belly hanging outwards on the right side, where I observed a tumor as large as a child's head: and she was distressed with a fluor albus, for which I gave her some medicines, and

advifed her to drink decoctions of the vulnerary plants, and to fupport the fide of her belly with a bandage. The patient has enjoyed very good health ever fince, manages her family affairs, and has frequently walked to market in this town, which is fix miles diftance from her own houfe."

CASE V.—The following is from Dr. King in the fame volume, article 38. "There is another woman lying within five miles of this place, from whom a midwife took a child by the Cæfarean operation near two years ago; I faw the poor woman foon after, and drew out the needles which the midwife had left to keep the lips of the wound together. I perceived the mufcles contracted into a lump at the lower part of the belly, which increafed, and at laft broke and ran confiderably. This woman is capable of doing fomething for her family, with the affiftance of a large bandage, which keeps in her inteftines. This child, which I faw, was not extra-uterine; for feveral befide the midwife affured me, that a leg of it prefented itfelf to view in the vagina before the operation."

CASE VI.—This was a cafe of the Cæfarean operation, performed by Mr. Smith, furgeon, in Edinburgh. It was communicated to Dr. Smellie, and inclofed with the following remarks by Dr. Auften.

"The only remarkable circumftance in it," fays the doctor, "is, that the impregnated uterus may be cut without any confiderable hemorrhage; but it is fuch a dangerous operation, that it ought never to be performed, if there is the leaft probability of bringing away the child in any fhape. I was prefent when Mr. Smith performed the operation, and recollect the fudden contraction of the uterus, which I fuppofe prevented the hemorrhage."

Mr. Smith relates the particulars in the following words:

"I was fent for," fays he, "to —— Paterfon, a drummer's wife, in the Canongate, about ten at night, who had been in labour for fix days. She was one of the leaft women I ever faw, and prodigioufly deformed.

"I touched her, and found fomething in the vagina fo large, that I at firft took it for the head of the child; but foon found I was miftaken, for, examining more attentively, I found towards the offa pubis the os uteri, thick, high, and a very little dilated, and through it I felt diftinctly the child's head. What I at firft took for it proved to be the os coccygis of a very extraordinary fize and fhape, turned inwards quite acrofs the vagina, and reaching almoft to the fore part of it. About an inch and a half, or two inches, above the extremity of the os coccygis, I felt the offa pubis, not forming a convexity outwards, as they do in a natural ftate; but were depreffed inwards, fo that I could fcarce get up two fingers betwixt this monftrous os coccygis and the offa pubis. The woman being much fatigued with pains and want of fleep, I ordered an opium pill to procure reft.

"I visited her next morning, and found she had slept some hours; but after she awaked she had had violent pains. Upon touching, I found the os uteri a little more dilated, so that I could feel about the breadth of half a crown of the child's head. The constriction of the parts was such, that it was impossible to deliver her in any shape; I therefore endeavoured with all my strength to press downwards and backwards the os coccygis; but in vain. I then told the women that were about her, that it was impossible to deliver her: they begged of me to try any method, however desperate. One of them proposed a crotchet; but the passage between the bones of the pelvis was so narrow and so crooked, that it seemed to me absolutely impossible to bring away a child in any shape through them. I promised to pay another visit soon, and to bring some of my brethren along with me, and to give her all the assistance we could.

"Accordingly several of my brethren visited my patient along with me, and they were unanimously of opinion that the child could never be brought through the vagina, and that the only chance she had for life, and even that a very small one, was to undergo the Cæsarean section. This was told the woman and her friends; and, to prevent any reflections afterwards, we repeated, in the strongest terms, the great danger the woman would run in the operation, and that possibly she might die in our hands; but they were resolved to run all risks."

Accordingly ten at night was appointed for the operation, and many gentlemen of the faculty were present, and, among others, Dr. Monro, professor of anatomy.

The instruments and dressings provided were as follow: 1, a common scalpel; 2, a pair of crooked scissars; 3, two needles threaded; 4, four large needles threaded for the gastroraphia; 5, scraped lint; 6, a large compress, napkin and scapulary; 7, ink; 8, a cordial to be given during the operation.

"The patient was laid on her back on a table covered with blankets, with a pillow below her head. Her body being secured, I seated myself at her right side. I drew a line with ink about six inches in length, parallel to the linea alba, and four inches distant from it, in order to avoid cutting the musculus rectus. I then with a convex scalpel made an incision along the black line, through the teguments and fat. In the middle of the section, I gently cut through the muscles and peritoneum, so as to get in the fore-finger of the left hand, upon which with the crooked scissars I enlarged the wound upwards and downwards, equal to the black line I had made in the skin. The epigastric artery was opened, which I immediately stitched.

"I then cut into the uterus, and tore the membranes containing the child; but as the child was large I found the incision in the abdomen too small, I was obliged to enlarge it upwards to the

ſhort ribs, and downwards to the oſſa pubis, the uterus in proportion. I then extracted the child without any violence, afterward the placenta and the membranes. I put my hand again into the uterus, and brought away ſome coagulated blood. The child was dead, but quite freſh. I reduced a little of the gut that came down, and made the gaſtroraphia at three ſtitches without any peg.

" After the firſt ſtitch the gut gave me no more trouble. I covered the wound with ſoft pledgets, applied a large compreſs, and over all, the napkin and ſcapulary.

" The poor woman bore the operation with great courage. After ſhe was put to bed, ſhe took a quieting draught with laudanum, and a bottle of emulſion for ordinary drink. She did not loſe above four or five ounces of blood during the operation. In the night ſhe bled a little, but it ſtopped before I got to her; ſhe had not ſlept, but otherwiſe was tolerably well. Next day I viſited her; ſhe told me ſhe had had ſome ſlumbers in the morning. About twelve o'clock ſhe complained of ſickneſs at her ſtomach, with an inclination to vomit; her pulſe was then very frequent and ſmall. She gradually grew weaker and weaker, and died about four in the afternoon. There came not away above two tea-ſpoonfuls of blood from the vagina, the uterus was at leaſt one inch and a half thick."

Her friends would not allow her body to be opened, a circumſtance much to be regretted, as the efforts of nature to accompliſh a re-union of the parts would have been obſervable.

In the Memoirs of the Academy of Surgeons at Paris, are a great many caſes, and alſo the diſputes for and againſt performing the Cæſarean operation on women when alive.

Case VII.—The following caſe of Cæſarean ſection, by Mr. Wood, man-midwife in ordinary to the Lying-in hoſpital in Mancheſter, appears in the Memoirs of the Medical Society of London.

" Elizabeth Thompſon, of Hazlehurſt, near Aſhton-under-Line, aged thirty-two, was brought to the Lying-in hoſpital, on Monday, the 24th of laſt June. I ſaw her," ſays Mr. Wood, " in the afternoon, and was informed that labour came on about one o'clock in the morning; that the membranes burſt ſoon after; that her pains had been very frequent; and that Mr. Ogden, a ſurgeon in that neighbourhood, was called in, who, upon examining her ſituation, thought proper to ſend for Mr. Simmons from Mancheſter. No attempt was made by either of theſe gentlemen to deliver the patient; but ſhe was adviſed to become an in-patient of the Lying-in hoſpital in Mancheſter; and the poor woman and her friends readily agreeing to this propoſal, ſhe was conveyed in a cart from her houſe, which is nine miles diſtant from the hoſpital, and ſome parts of the road are very rugged.

" Upon a careful examination per vaginam, I found the pelvis ſo much deformed at the ſuperior aperture, that the ſpace from

the ſymphyſis pubis to the os ſacrum would only admit the points of my two fingers, and could not exceed an inch; and there was not in any other point, from the anterior to the poſterior part of the ſuperior aperture, a larger ſpace than would admit the introduction of one finger; nor could I perceive the leaſt appearance of os uteri or any part of the child, although I introduced my hand into the vagina.

"On diſcovering the extreme deformity of the pelvis, I deſired a conſultation of the men-midwives belonging to the hoſpital. Meſſrs. White, Hall, Tomlinſon, and Thorp, attended, and having examined the poor woman with great care and attention, we were unanimouſly of opinion, that the delivery could not be accompliſhed by any other means but the Cæſarean ſection. She was made acquainted with our ſentiments, and very willingly ſubmitted to our propoſal.

"About nine o'clock that night I performed the operation in the following manner, in the preſence of the gentlemen before mentioned, who very obligingly gave me every neceſſary aſſiſtance: I began the inciſion on the left ſide, a little below the umbilicus, and having cut carefully through the parietes of the abdomen, which were very thin, to the extent of an inch, I introduced my finger, and, uſing it as a director, enlarged the wound by a probe-pointed biſtory, in an oblique direction towards the ſpine of the ilium, to about ſix inches. The uterus was placed in immediate contact with the parietes of the abdomen, at the upper part of the inciſion; but towards the lower angle of the wound the inteſtines intervened, and began to protrude. As ſoon as the external inciſion was completed, I made an opening in the ſame manner, and in a ſimilar direction, into the uterus, which appeared to be nearly half an inch in thickneſs, and with great eaſe extracted, by the knee, which preſented at the wound, a large male child, which for a few minutes was in a very weakly ſtate, but ſoon recovered, and continues ſtrong and healthy.

"The placenta was brought away without any difficulty. The inteſtines protruded at the wound, but were returned and retained in the cavity of the abdomen, whilſt I ſecured the lips of the wound by the interrupted ſuture, carefully avoiding paſſing the needle through the peritonæum. The ligatures were placed about an inch diſtant from each other, and the intervening ſpaces were ſupported by ſlips of adheſive plaſter, over which I placed a common pledget; and a flannel bandage was applied, ſo as to occaſion a moderate degree of preſſure upon the abdomen. The quantity of blood loſt during the operation was not conſiderable. It did not appear to exceed eight ounces, and moſtly proceeded from the uterine veſſels.

"The patient bore the operation with ſuch remarkable patience and fortitude, that ſhe was ſcarcely heard to complain.

" As ſoon as ſhe was removed from the table, and laid in bed, ſhe became ſick and vomited; and her pulſe at this time beat 130 ſtrokes in a minute. An opiate was adminiſtered, and I ſaw her in two hours after the operation. Her pulſe was reduced to 100, and no ways irregular. She had got ſome comfortable ſleep, and the ſickneſs had not returned.

" I ſaw her again, along with the gentlemen before mentioned, on Tueſday, at eight o'clock, A. M. She had got ſome comfortable ſleep during the night: her pulſe 106.

" She had voided a conſiderable quantity of urine; had a moderate diſcharge per vaginam; and ſhe did not complain of much pain. A ſmall quantity of bloody ſerum had oozed from the wound.

" At two P. M. we found the appearances much the ſame as in the morning. As the patient had no evacuation by ſtool, an emollient clyſter was preſcribed.

" Ten o'clock P. M. ſhe had experienced a return of the vomiting, and complained of more pain of the abdomen; but upon removing the bandage, we did not perceive any material degree of tenſion. Her pulſe 108, and rather hard. The clyſter not having procured a ſtool, ſhe was ordered to take half an ounce of a purging ſalt immediately; and if it ſhould have no effect, or not ſtay upon the ſtomach, ſhe was to take a pill containing three grains of calomel, and one grain of purified opium.

" On Wedneſday, at ſeven A. M. we found that her ſickneſs returned in an hour after the ſalts had been given; the pill was then adminiſtered, and the vomiting did not return for ſeveral hours after, but no evacuation had been procured. She had got little ſleep during the night, and ſtill complained of pain in the lower part of the abdomen. Her pulſe was 120, and rather hard, tongue white, and ſkin dry. She was directed to take five grains of calomel made into a pill with conſerve.

" At twelve we found that her ſickneſs had returned in about two hours after taking the pill, and that no ſtool had been procured. Her pulſe was about 144, and ſhe was in a violent ſtate of perſpiration. Half an ounce of caſtor oil was directed, and a purgative clyſter to be injected immediately. At four, P. M. her pulſe was much in the ſame ſtate; ſhe had experienced no return of vomiting, and ſeemed more compoſed. The clyſter had been retained, and ſhe was ordered another, compoſed of two drachms of tobacco infuſed in half a pint of boiling water.

" Nine o'clock P. M. we found her much in the ſame ſtate as when we laſt ſaw her. The injections had come away, but there was very little appearance of fæces. Her ſickneſs was not ſo troubleſome; pulſe 140. As ſhe complained of more pain in the lower part of the abdomen, the bandage and dreſſings were removed, [illegible] was very little tenſion. The wound had a very favourable [illegible] and the lips were in contact. Dreſſings were applied

as before, and ſhe was ordered to repeat the pill with calomel, and if it ſhould not operate in three hours, a clyſter with half an ounce of common ſalt was to be adminiſtered; and, as ſoon as an evacuation was procured, ſhe was to take a grain of purified opium. A bliſtering plaſter was alſo applied to the abdomen, where the pain was felt.

"Thurſday, ſeven o'clock A. M. ſhe had paſſed a tolerable night, the bliſter had riſen, and ſhe ſeemed more compoſed; pulſe 150. As the injection had been retained, ſhe was ordered a ſuppoſitory of ſoap.

"Two o'clock P. M. appearances were much more unfavourable. She had very frequent vomitings of a coffee-coloured fluid. The pain in the abdomen was very much abated. Her pulſe was very feeble, and beat more than 160 ſtrokes in a minute. Till this time ſhe had obſerved an antiphlogiſtic regimen: but was now ordered wine in gruel and whey, and to take a bolus containing muſk and ſalt of hartſhorn, of each ten grains, which was to be repeated in four hours. As the clyſter had been voided without any appearance of fæces, another injection was ordered to be thrown up, with ſome degree of force, by a ſyringe.

"At nine o'clock the ſymptoms were become ſo extremely unfavourable, as to preclude all hopes of her recovery; nor was ſhe likely to remain alive many hours. Her pulſe was exceſſively frequent, ſmall, and irregular. She had inceſſant ſickneſs and vomitings, was very reſtleſs, and her reſpiration much hurried. The injection had come away, but without producing any effect. From this time ſhe ſunk gradually, and expired on Friday about one o'clock A. M. which was ſeventy-ſix hours from the time of the operation being performed. She retained her ſenſes to the laſt."

The following are deſcribed by Mr. Wood to have been the appearances on diſſection: "In about ſix hours after her death," ſays he, "I inſpected the body, in the preſence of the gentlemen before mentioned, and ſome others, and found that the edges of the external wound were in cloſe contact, but only a very ſlight adheſion had taken place. On expoſing the cavity of the abdomen, there appeared to be about ten or twelve ounces of a bloody ſerum, but not much coagulated blood. There was very little appearance of inflammation, either of the peritonæum or inteſtines. The latter ſeemed much diſtended, but there did not appear to be any accumulation of hardened fæces.

"On examining the uterus, which was about ſeven inches in length and four in breadth, we found its mouth very much dilated. The wound, which extended from the fundus obliquely downwards about four inches, was not at all united, and there was very little appearance of inflammation about it, but the inferior portion of the body and *cervix uteri* were evidently in a gangrenous ſtate."

To this account the author annexes the following remarks:

"The deformity, above alluded to," says he, "was produced in the adult state by malacostion.

"About nine years ago the poor woman brought forth a living child, and had an easy labour. After this confinement she was frequently affected with pain about her loins, and some degree of lameness. She conceived again, and Mr. Hall informed me that he attended her in labour about seven years ago, and, at that time, found the pelvis so much distorted, that he was under the necessity of opening the head of the child, and delivering by the crotchet. Her state of health after this was somewhat tolerable; but the pain about the loins continued to increase, attended with the lameness, but never to so great a degree as to prevent her walking.

"From the inclination of the fundus uteri to the left side, from the parts of the child that presented upon opening the uterus, and from the particular curvature of the spine, as appeared upon inspecting the body, the os uteri and child's head appear to have been forced upon the right side of the pelvis, and to have remained considerably above the superior aperture, which prevented their being discovered upon an examination per vaginam.

"From a review of the case, there is very great reason to suppose that her death was not occasioned by the operation, but by the gangrene that had taken place in the cervix uteri, which in my opinion must have been occasioned by the pressure of the child's head upon that part, prior to the operation; and I am induced to believe, had the operation been performed earlier, and at the patient's house, she would have stood a great chance of recovering. The pelvis was removed, and when carefully divested of all the soft parts, the dimensions were found as follow:

"The lumbar vertebræ projected inwards, and made a considerable curve to the left, as will be seen in the annexed plate.

"The distance from the lower part of the second lumbar vertebra to the anterior part of the spine of the os ilium, on the left side, is two inches.

"The distance from the lower part of the second lumbar vertebra to the anterior part of the spine of the os ilium, on the right side, is five inches.

"From the crista of one os ilium to the other, at the most distant points of the pelvis, measured ten inches and a half.

Superior Aperture.—"The conjugate or antero-posterior diameter from the symphysis pubis to the upper edge of the last lumbar vertebra A. A. (see the dotted outline in plate) is one inch and a half.—This diameter is not taken from the os sacrum, or its junction with the last lumbar vertebra, because the point of their junction is so much sunk into the pelvis, that the place it should have occupied is represented by the fifth lumbar vertebra.

"The transverse diameter G. G. measures four inches and five eighths. It is taken from one sacro-iliac symphysis to the other.

" The diſtance of the point of this aperture, which is oppoſite to the anterior part of the right acetabulum, from the lumbar vertebra, C. C. is only half an inch.

" The diſtance from that part of this aperture which correſponds with the poſterior part of the right acetabulum, to the os ſacrum, D. D. is three quarters of an inch.

" The diſtance of the point correſponding with the anterior part of the left acetabulum, from the lumbar vertebra, in the direction E. E. is five eighths of an inch.

" The diſtance of the point of this aperture, oppoſite to the poſterior part of the left acetabulum, from the os ſacrum, in the direction F. F. is three fourths of an inch.

" The diſtance of one os pubis from the other, in the points marked B. B. is ſeven eighths of an inch.

" The diſtance from the right ſacro-iliac ſymphyſis to the ſymphyſis pubis, G. A. is three inches and three fourths.

" The diſtance from the right ſacro-iliac ſymphyſis to the left os pubis, G. B. is three inches and three eighths.

" The diſtance from the left ſacro-iliac ſymphyſis to the ſymphyſis pubis, G. A. is three inches and five eighths.

" The diſtance from the left ſacro-iliac ſymphyſis to the right os pubis, G. B. is three inches and one fourth.

" The largeſt circle that can be formed in any part of the ſuperior aperture, does not exceed in diameter one inch.

Inferior Aperture.—" The diſtance from one ramus oſſis iſchii to the other, where they are united with the rami pubis, meaſures only half an inch.

" The diſtance from the tuberoſity of one os iſchium to the other meaſures one inch and two tenths.

" The conjugate or antero-poſterior diameter, taken from the ſymphyſis pubis to the point of the os coccygis, is three inches."

IN the Medical and Phyſical Journal, Mr. Hardman, of Bolton, in Lancaſhire, gives the following intimation of the degree of ſucceſs which has attended this operation in recent inſtances. " Hyſterotomy, or the Cæſarean ſection," ſays he, " was performed upon a woman at Rochdale, about a month ago; the child was taken out alive, but is ſince dead; the mother ſurvived till the fifth day. Three caſes of this ſort have occurred in Lancaſhire within little more than two years, two at Mancheſter, and the one now announced at Rochdale. This is extremely ſingular; for, I believe, no ſuch inſtance is recorded as having happened in this country for many years before. In the firſt that is mentioned from Mancheſter, which is the caſe of Ann Lee, the woman was in a dying ſtate when ſhe underwent the operation, and a putrid fœtus was extracted; but as the ſtate of it could not be aſcertained before birth, and as

the child might have been preserved, nothing could add to the danger of the mother; the operation was unquestionably justifiable. In the second, that of Elizabeth Thompson, the section was made in less than twenty-four hours from the coming on of labour, and she survived it nearly seventy-six hours; the child lived about eighteen months. It is worthy of remark in Elizabeth Thompson's case, that it appeared to the accoucheurs of the Lying-in hospital at Manchester, where she was operated upon, that she did not die in consequence of the operation, but of an injury done to the uterus by the pressure of the child's head, which had taken place before the operation. It is indeed surprising that so little mischief should be occasioned by extracting a child in this way; nevertheless, they are gentlemen of veracity, and, in their own neighbourhood, of the first eminence in their profession. I am credibly informed, that she was so well the day after the operation, as to sit up in bed and smoke a pipe of tobacco. The woman at Rochdale was seen by Mr. White, of Manchester, soon after the operation; and at that time, as I am well informed, there was nothing in her situation that denoted danger till the dressings were removed from the external wound, which unfortunately appeared to be in a gangrenous state, and this, most probably, was the immediate cause of death. If women can safely undergo this operation upon the continent of Europe six or seven different times, of which we are well assured, why should practitioners be discouraged from employing it, by its failure in the few instances that have occurred in this country? The authority of Mr. White must have great weight in recommending the practice, and also much force in doing away the fears of those among us who had been deterred from practising it by an apprehension of danger."

CHAP. VIII. OF THE SECTION OF THE SYMPHYSIS PUBIS.

M. BAUDELOCQUE, as has already been observed, condemns this operation; and, from what he has advanced, apparently with reason. As no theory, however, can be looked upon as thoroughly established until it be confirmed by experience, this gentleman has collected together a number of the principal facts relating to this subject. He supposes, that unless it has been successful in saving both the life of the woman and child, the cutting of the symphysis of the pubes cannot by any means be said to have answered its purpose. It is not sufficient that the child has shown some signs of life at its birth, and that the mother has survived for some time. In this respect the Cæsarean operation has the advantage of it, as it always saves the life of the child, and it is very rare for the woman to sink under it immediately. He is of opinion, that there is

ſcarcely one of the caſes of this operation, the relation of which may not be juſtly conteſted, or ſolid objections raiſed againſt it; either becauſe the operators have been deceived with regard to the dimenſions of the pelvis and of the child's head, or becauſe they have greatly exaggerated the advantage gained by the ſeparation of the bones.—The firſt and moſt remarkable inſtance of ſucceſs in this operation is of a woman named Souchot; but though it is not denied that the woman was delivered, and recovered after the operation, yet it has been ſaid by thoſe who take the contrary ſide, that there was no neceſſity for performing it. It is certain that this woman had been delivered four times before; in all of which caſes the child was killed. M. Baudelocque does not enter into the merits of this queſtion: he conſiders only what advantage could poſſibly be gained by it.

"Whatever degree of ſeparation," ſays he, "took place between the oſſa pubis after the ſection of the ſymphyſis, it muſt have augmented the ſize of the paſſage; that is an inconteſtable fact: but how much did it enlarge in the direction in which it was originally too narrow? The ſolution of this problem would be eaſy, if we knew the dimenſions of Souchot's pelvis as well as we know thoſe of her child's head. According to the eſtimation made of it by the phyſicians who performed the operation, the diameter of the pelvis was only two inches and a half in the direction from the pubes to the ſacrum ſuperiorly, and that of the child's head was juſt three inches and a half. The exceſs of the latter was conſequently one inch, as well as the amplitude to be procured to the former. A ſeparation of two inches and a half between the oſſa pubis, the greateſt which it was then thought could be obtained, not being able to give more than ſix lines to the diameter of the pelvis in the aforeſaid direction, they thought to make the remaining ſurplus of the head paſs into the ſeparation between the bones; and, moreover, they had the precaution to make the partial protuberances paſs ſucceſſively through the ſtrait, in order to get another line by that means; ſo that, by this ſyſtem, the ſection of the pubes produced a reſult of 13 lines at leaſt, conſidering it relatively to delivery. Notwithſtanding this ingenious calculation, and this great product, the paſſage was ſtill found narrow enough to give ſome obſtruction to the child's head, and to endanger its life.

"It ſeems evident that this plan was not formed till after the execution; and that they have only ſought to explain what they muſt have done according to the opinion which they entertained that the diameter of the child's head was an inch larger than that of the pelvis, and not according to what they did and obſerved; becauſe no one had yet determined the product of a ſeparation of two inches and a half between the oſſa pubis, with reſpect to the different diameters of the pelvis, and particularly reſpecting that which goes from before backward; becauſe they did not meaſure

the ſeparation as they affirm they did, neither in the caſe of Souchot nor in any other; becauſe the accoucheurs of that woman were then agitated, much agitated, as they have publicly confeſſed; laſtly, becauſe this great product, and thoſe ſage calculations which we admire in their hiſtory of it, were not then neceſſary. Though they have allowed but two inches and a half to the ſmall diameter of the ſuperior ſtrait, other accoucheurs equally ſkilful have aſſigned it ſix lines more; and they were not deceived if they conſidered it a little diagonally, as the ſmalleſt diameter of the child's head always preſents; that is to ſay, from one of the ſides of the projection formed by the baſe of the ſacrum to the ſymphyſis of the pubes."

Our author now goes on to ſhow, at great length, that the pelvis of the woman in queſtion was leſs out of proportion than had been repreſented; that only two lines of enlargement were neceſſary, and no more than two were obtained. In like manner, he ſays, that all the other women upon whom M. Sigault operated were equally well formed, excepting one named Veſpres. This woman died after paſſing five days in great agony. The oſſa pubis were ſeparated about an inch and a half; and in conſequence of this ſeparation, the ſacro-iliac ſymphyſes were plainly injured, as well as the neighbouring part. On inſpecting the body, theſe were found open, with the perioſteum ſeparated from them: there was alſo a collection of purulent matter of a dark grey colour, extending very far into the cellular tiſſue of the left iliac foſſa, &c.

In this caſe, both the mother and her child periſhed; and M. Baudelocque looks upon it to be ſufficient to ſhow the inefficacy of the operation: and he tells us, that out of five women whom Sigault delivered in this way, one died, and four of the children: but M. le Roy, a more ſucceſsful operator, out of an equal number, ſaved all the children. In a caſe related by this gentleman, the oſſa pubis are ſaid to have ſeparated two inches; and by parting the thighs, an opening of near three inches was obtained: but in this caſe again, M. Baudelocque controverts the meaſurements of Le Roy. Another woman named Du Belloy, on whom the operation was performed, began to walk on the tenth day after; and this ſeems to be almoſt the only caſe againſt which M. Baudelocque has not ſome objection. He mentions, however, an experiment performed on the body of a woman who had died on the eleventh day after the Cæſarean operation had been performed in the linea alba. The body was œdematous, which rendered the caſe more favourable; and a dead child was placed in the belly, after taking out the uterus. The pelvis was only 20 lines in the ſmall diameter, and four inches and a quarter in the tranſverſe. The diameter of the child's head was but three inches five or ſix lines from one parietal protuberance to the other; the trunk was thin, and every part of the body had been preſſed and kneaded, to reſtore as much as poſſible the ſuppleneſs which death had taken away. An attempt was then

made to bring the child through the pelvis by pulling its feet; but it was found impossible thus to disengage it further than the breast. The symphysis of the pubes was then laid bare, by an incision of two inches and a half; preserving, below, the anterior commissure of the labia pudendi; and above, an extent of 18 or 20 lines under the inferior angle of the Cæsarean operation. The ossa pubis separated at first no more than nine lines; which opening was augmented as gradually as possible to 21 lines by separating the thighs, and afterwards it was further increased to two inches and a half by pulling the hips. It was next attempted to bring away the head, which had spontaneously placed itself in the most advantageous situation: but, though several gentlemen of the profession employed their strength successively at the trunk, and on the lower jaw with two fingers in the mouth, it did not advance a single line; nor would it pass the strait until M. Baudelocque seconded those efforts by pressing on the head with one hand placed in the belly, and by compressing it strongly in the direction of its thickness. At the instant when it cleared the strait, the inferior angle of the incision in the teguments tore to the vulva; and the wound was so lengthened towards that of the Cæsarean operation, that those three openings were very near making but one. The sacro-iliac symphyses, which were already a little open, and the ligaments and periosteum ruptured by the time that the ossa pubis were separated 21 lines, now gave way entirely, and with so much noise as to be distinctly heard by every one of the assistants. The ossa pubis, after the passage of the head, remained at the distance of three inches from each other; the angle of the right os pubis was two inches and six lines from the centre of the projection of the sacrum, and the angle of the left os pubis only two inches and three lines; so that the diameter of the pelvis was augmented seven lines in one way and ten in the other.

From this experiment, M. Baudelocque concludes that very little advantage can be expected from the operation where the pelvis presents only 18 or 19 lines, or even 21 superiorly, such as was the pelvis of Belloy. We must observe, however, that we cannot argue with propriety from a dead to a living subject: though if the measurements are wrong, as our author afterwards says, although at first he "had nothing particular to object" to her case, the whole argument in favour of the operation must fall to the ground.

Objections of a similiar kind are made to every other case which M. Baudelocque relates; and as it is impossible for those who were not acquainted with the parties to judge of the propriety or impropriety of the operation, we shall content ourselves with describing from M. Baudelocque the appearances met with in the body of a woman who had died in the operation. "The left labium was very much swelled and livid; the sacro-iliac symphyses were of a brownish colour to the extent of an inch at least, on account of the

blood extravaſated under the perioſteum which was detached from them; they were overflown with a purulent and ichorous diſcharge, more abundant on the left ſide than the right; and which ſprung from the bottom of them, through ſeveral openings, which were ſo many rents, whenever the oſſa ilia were moved and preſſed towards the ſacrum; the left ſymphyſis was open five lines, and the right only three; a gangrenous abſceſs was ſeen on the right ſide behind and above the acetabulum, which extended to the anterior and inferior part of the uterus, where there was an eſchar of the ſame nature; an ulcer alſo gangrenous, and in form of a chink, was obſerved in the poſterior part of that viſcus, from the upper part of its neck to the inſertion of the ligament of the ovarium, and it penetrated into its cavity. The diameter of the pelvis was two inches and a half from the pubes to the baſe of the ſacrum; five inches from one ſide to the other; and four and a half from one acetabulum to the ſacro-iliac junction of the oppoſite ſide. The ſection had been made on the left os pubis, which was cut clean, and without the ſmalleſt notch."

From theſe, and a number of other examples which our limits will not allow us to inſert, our author deduces the following concluſions.

"Though the ſection of the pubes has been thought more ſimple, more eaſy and certain, than the Cæſarean operation, at a time when experience had not yet demonſtrated the difficulties it might preſent, and the dangers that might follow it, ought we to think the ſame of it at preſent? How many times already has it been neceſſary to have recourſe to the ſaw to ſeparate the oſſa pubis? and how often has it not been found impoſſible to procure any diſtance between them after the ſeparation? How often has this operation produced a free paſſage for the child, whoſe preſervation ought neceſſarily to enter into the plan of the operator, as well as that of the mother, and conſtitute a part of its ſucceſs?

"This new operation will appear more ſimple and leſs painful than the Cæſarean, if we only conſider the extent of the inciſion, and the nature and importance of the parts concerned in it: that is an indiſputable fact. It is only the teguments and the fat which is divided, at moſt only two inches and a half, and the ſymphyſis of the pubes; there are uſually only ſmall veſſels cut, incapable of furniſhing much blood, and the inſtrument does not touch the uterus; the child comes into the world by the way that nature intended, and which the ſection of the pubes renders more or leſs acceſſible; there is no conſiderable hemorrhagy to be feared, nor thoſe extravaſations of milky and purulent matter which almoſt always mortally injure the interior viſcera which they fall upon; there are no abſolute difficulties in the execution of this operation but what ariſe from the intimate conſolidation of the bones; and it no way expoſes women to ſubſequent hernias which have been ſo

frequently ſeen after the Cæſarian operation: this is the idea which its partiſans have had of it, and which the greater part of them ſtill entertain.

"But the ſection of the pubes ſeldom procures the child an eaſy exit; for hitherto the greater part have died in the paſſage, or have been victims, a few minutes after their exit, to the efforts neceſſary to effect it. When the ſeparation of the oſſa pubis has been made, it has not always been poſſible to remove them from each other, on account of the conſolidation of the ilia with the ſacrum; and this caſe, which does not ſeem to be exceedingly rare, and which cannot be known till after the operation, renders it fruitleſs, and cannot diſpenſe us from the Cæſarean operation.

"If we reflect ever ſo little on the danger to which the child is expoſed in a preternatural labour, where we are obliged to bring it by the feet, and on the ſmall number that then eſcape death, when the mother's pelvis has not, pretty nearly, all its natural dimenſions, we diſcover another ſource of accidents which accompanies the ſection of the pubes; and which we doubtleſs ſhould diminiſh, if we could commit the expulſion of the child to the contractions of the uterus, or take hold of the head with the forceps, as ſome practitioners have already done; but, except in that very ſmall number of caſes, the child has always been extracted by the feet, whether the head preſented or not.

"Though this operation very ſeldom ſecures the child's life, even when the pelvis is not exceſſively deformed, it is not then always exempt from the ſevereſt conſequences to the mother. The death of both is certain when that deformity is extreme. The conſequences of a ſpontaneous ſeparation of the oſſa pubis, and of the oſſa ilia and ſacrum, in ſome natural or laborious labours, long ſince announced thoſe which might be expected from this new operation; the example of Veſpres, thoſe of the fifth woman on whom M. le Roy performed it, the fourth by M. Cambon, that at Arras, at Duſſeldorp, at Spire, at Lyons, at Gênes, that by M. Riollay, by M. Matthiis, &c. have proved that it was not without cauſe that thoſe accidents were dreaded. A devaſtation in the external parts and the neck of the uterus; an inflammation and gangrene of that viſcus; collections of purulent, ſanious, and putrid matter, in the cellular tiſſue of the pelvis; a hernia of the bladder between the oſſa pubis; ecchimoſes along the pſoæ muſcles; injury to the canal of the urethra, incontinence of urine, and gangrenes more or leſs profound, &c. form the group of accidents of which this new operation is ſuſceptible. Granting that thoſe of the Cæſarean operation are as formidable for the mother, at leaſt it preſents a certain reſource, exempt from every danger, for the child. Which of the two operations therefore ought to be preferred?

" Even if we could, without inconveniences to the woman, obtain a ſeparation of two inches and a half between the oſſa pubis after the ſection of their ſymphyſis, the Cæſarean operation would ſtill be the ſole reſource in caſes of extreme deformity of the pelvis; the ſection of the pubes cannot enter into compariſon with it, except when the ſmall diameter of the ſuperior ſtrait ſhall have, at leaſt, an extent of two inches and a half. Though I ſuſpended my judgment, at the time I publiſhed my firſt edition, concerning the preference to be given to one of theſe two methods, in the latter caſe, till I could procure more poſitive information of the innocence or danger of ſo conſiderable a ſeparation; though I required that men who had no intereſt in vaunting this new method to the detriment of the former; in one word, that its adverſaries ſhould have ſeen a ſeparation of two inches and a half, without a rupture of the ſacro-iliac ſymphyſes, and without inconveniences to make me adopt this new operation; at preſent, better informed on all theſe points, I am not afraid to reject it, and to affirm, that no one has ever ſeparated the oſſa pubis two inches and a half without deſtroying the life of the woman. It has had no ſucceſs but when it has been performed on pelviſes at leaſt two inches three quarters in the ſmall diameter, and when the ſeparation has been limited to much leſs than the point to which they fancied it was carried; in thoſe caſes, in fact, where it was abſolutely uſeleſs; the pelvis being larger ſtill, for I have found it to be more than three inches in ſome of the women. The ſection of the pubes cannot at preſent maintain any compariſon with the Cæſarean operation; at moſt, it might be ſubſtituted for the forceps, in ſome particular caſes only: for it cannot, without great inconveniences, give the pelvis an increaſe of more than two lines from the pubes to the ſacrum ſuperiorly; and that inſtrument may, without danger, reduce the diameter of the child's head as much. But what practitioner would prefer a new operation, which ſeems to be ſurrounded by rocks on every ſide, to one that has been crowned with a thouſand ſucceſſes? If we allow the former any advantages, they would never be more evident than in that ſpecies of locked head mentioned by Roederer, where we cannot (ſays he) introduce any inſtrument between the head and the pelvis, at whatever part we attempt it; in that caſe, it would merit a preference over opening the cranium, the uſe of the crotchets, and the Cæſarean ſection propoſed by the ſame author: it would be preferable alſo, in caſes where the inferior ſtrait is contracted tranſverſely, provided that a ſmall ſeparation were ſufficient to give that diameter the neceſſary extent."

Notwithſtanding the plauſibility of what has been advanced by the different continental practitioners whoſe names have occurred, we acknowledge our ſcepticiſm without the leaſt reſerve; and

are inclined to place an implicit confidence in the following candid opinion advanced by Dr. Denman.

"For the reasons advanced by Dr. Hunter," says he, "the operation was never (except in one unhappy case) performed in this country, and so perfectly were the minds of men satisfied of its impropriety and insufficiency, that I do not believe the section of the symphysis ever came into contemplation in any one case of difficult parturition with any of the gentlemen who practise midwifery in this city. But as accounts of the operation were frequently brought from the continent, and as active measures were pursued for supporting the celebrity with which it had been first brought into notice, Dr. William Osborn examined all the cases then published, stated with precision the little advantages gained, the injuries occasioned, and the general result of the operation, and proved both by facts and arguments the cruelty and futility of it, in a very sensible essay first written professedly on the subject.

"Here the matter might for ever have rested; but in writing on the practice of midwifery, as well as any other art, it seems necessary to record not only what has been proposed and done with success, but the trials that have been made of things proposed, though unsuccessful, and on what circumstances the want of success depended; otherwise there might be at different times a repetition of the same trials and of the same misfortunes. Perfectly convinced though I am of the impropriety of this operation, and hoping that no attempts will ever be again made to bring it into practice, it seemed necessary to give this short account of it, and I cannot refrain from making the following observations.

"1. It is proved, that some enlargement of the capacity of the pelvis is actually obtained by dividing the symphysis of the ossa pubis.

"2. That the evils, which have followed this operation, have been very much occasioned by its being performed unskilfully, or by injudicious endeavours to increase that enlargement of the capacity of the pelvis beyond the degree which naturally follows the division of the symphysis.

"3. That many women who have undergone this operation have recovered; though of those who recovered many suffered very serious complaints for a long time, or for the remainder of their lives.

"4. That some children were born living when this operation was performed.

"We may therefore presume to say, that if a case could be so precisely marked, that there should only be a deficiency of just so much space as would be supplied by the simple division of the symphysis, the operation might in that particular case be considered.

"We may alſo ſay, that this operation is not ſo certainly fatal to thoſe women on whom it may be performed as the Cæſarean operation; nor ſo certainly deſtructive of children as that of leſſening the head.

"We may then be allowed to ſuppoſe a caſe, and ſuch a one is more than poſſible, in which a perſon of very high rank, the life of whoſe child might be of the greateſt public importance, could not be delivered, without the deſtruction of the child, or her child be preſerved but by the Cæſarean operation at the expence or great hazard of her life; and that ſhe, through human frailty, might refuſe to ſubmit to the Cæſarean operation; yet the great intereſts and policy of the nation might forbid the deſtruction of the child. Of courſe both the mother and child would be inevitably loſt. Should ſuch a caſe occur, which, as I ſaid before, is more than poſſible, then the ſection of the ſymphyſis of the oſſa pubis might be propoſed and performed, as it would in ſome meaſure meet both their intereſts; being leſs horrid to the woman than the Cæſarean operation, and, inſtead of adding to the danger, give ſome chance of preſerving the life of the child.

"But, from the ſtatement of this caſe, or any thing before advanced, *I hope it will not be concluded, that I mean to inſinuate a wiſh, or to advance an argument, in favour of this operation*, in the caſes for which it was originally propoſed, or any other which can be imagined*."

* Though not exactly in uniſon with the ſubject of this chapter, we are tempted to mention a curious caſe which lately fell under the management of Mr. Kendrick, an eminent ſurgeon in Warrington. The patient was a ſickly, emaciated woman, who, in a former labour, had diſtinctly perceived a degree of friction, or crackling, take place at the ſymphyſis pubis. Though ſhe recovered from the immediate effects of parturition at that time, ſhe gradually became more and more ſenſible of a want of connection between the bones of that part, grew incapable of ſupporting herſelf in an upright poſition, and at length, falling into a conſumptive ſtate, ſhe was conſtantly obliged to be carried from her bed to her chair. Her extreme weakneſs was ſuch, that, in her preſent labour, her pains were not ſtrong enough to effect her delivery. Mr. Kendrick, after the moſt patient attention to this unfortunate caſe, found it neceſſary to turn the child, as the only means of accompliſhing its birth. Whilſt his hand was in utero, he had the moſt complete evidence, not only of the *diſunion of the ſymphyſis pubis*, but of the extremities of the bones *overlapping each other*, to ſuch an extent, as to cauſe a ſtrong and inconvenient preſſure on his arm, from the near approach of the iſchia. The patient died, as was expected; but, unfortunately, no perſuaſions could induce her friends to permit an examination of the body. We have reaſon to believe, the particulars of this caſe will be ſtated circumſtantially in a communication to the Medical Society of London.

PRACTICE OF MIDWIFERY.

PART III.

OF THE ACCIDENTS ARISING FROM LABOUR, THE GENERAL MANAGEMENT AFTER DELIVERY, AND THE DISORDERS SUBSEQUENT THERETO.

CHAP. I. LACERATION OF THE PERINÆUM.

ONE of the accidents to which women are liable under certain circumstances of labour, and often *unavoidably* so, is laceration of the perinæum. It has been already said that a defence of the parts against this unpleasant event is almost all that an accoucheur has to do in a labour that is perfectly natural. Instances, however, have occurred where every precaution has been fruitless, though exerted by practitioners of undoubted ability and experience. Dr. Smellie has furnished the following instances:

CASE I.—"I was called," says he, "by the friends of a young woman in Park-street, who had been delivered of her first child by her aunt, who was a midwife in the country at some distance. The fifth day after delivery, the nurse had alarmed the young creature and friends, by telling them that she was torn. I examined and found that the frenum labiorum was rent; but not the sphincter ani. They were all exclaiming against the midwife. I told them that such things would sometimes happen, even to the best practitioners; that there was no danger, and that the parts would recover and contract. The great anxiety of the patient was on account of her husband, who was then abroad; she feared that this misfortune would cool his affection. I made her easier by assuring her, that if she kept the secret, he would know nothing of the matter. I have indeed had cases, though seldom, in which this accident has happened; and from knowing that it commonly occasioned great anxiety to the patient, I spoke privately to the nurse, as in the following case."

CASE II.—"I attended an elderly woman of her first child;

the head was large, the perinæum was largely ſtretched and very thin. I held the flat of my hand againſt it during every pain, to prevent laceration by the head's coming out too ſuddenly. The pains were very ſtrong; and when one was over, I withdrew my hand to get ſome pomatum, to lubricate the parts. In this interval a pain coming on ſooner than I expected, and before I could introduce my hand to guard the parts, the head was delivered, and the parts were torn, as in the former caſe. I told the nurſe the misfortune; but deſired her not to mention it, becauſe it would make the patient uneaſy, and give her (the nurſe) much trouble. I aſſured her the parts would recover, and no bad conſequence enſue.

"I was deſired to viſit a woman whom another practitioner had delivered, and where he had ſtitched the perinæum after it had been rent in labour. The pain and inflammation were very great, and the ſtitches did not ſeem to be of any ſervice. I therefore adviſed to take them out; the patient was eaſier, the inflammation abated, and the parts recovered."

Case III.—"I was called by a midwife to a woman on the fifteenth day after delivery. The perinæum, vagina and rectum, were torn into one about the length of two inches, which prevented the retention of the fæces. The edges of the lacerated parts were beginning to ſkin over. I attempted with ſciſſars to pare the edges, as in the hare lip; but could not poſſibly hold the parts ſo as to effect this purpoſe. I then armed a lancet, and with the point ſcarified them, and with great difficulty made two deep ſtitches through the vagina and rectum, and two in the perinæum; but in two days this brought on a great inflammation, and the ſtitches all tore out. The parts digeſted and ſkinned over; but did not cement or join together: however, they contracted in ſuch a manner, that in three months after ſhe could retain her excrements."

Cases IV. and V.—"I attended in two days at different times, where the labours had both been tedious from large children. The external parts were much inflamed, and mortified ſloughs were diſcharged from the vagina, after which the urine followed involuntarily into the vagina. On examining, I found a paſſage from the bladder into the former. They both had made water freely for ſeveral days before I was called, ſo that I was certain the openings into the vagina proceeded from one of the mortified ſloughs caſting off from the parts. I tried in the firſt to make a ſuture to bring on an inflammation ſo as to contract the opening, but could not ſucceed, and the patients continued in that miſerable ſituation."

Case VI.—"I was called by Dr. Thomſon to aſſiſt him in delivering a woman where the arm of the child preſented. He told me that the woman had been ſo torn in a former delivery, that ſhe could with difficulty retain her excrements. Some time

after her recovery, we examined the parts, and advifed with others; but found it was impoffible to pare the parts fo as to get them to unite with the future. Befides, the vagina and rectum where the laceration ended, felt fo thin that they could not join at that part. One of my pupils told me he had fucceeded in a cafe where only the perinæum was torn, by making immediately the twifted future, as in the hare lip: however, as rents of the perinæum only are of little confequence, I never tried that method, imagining it dangerous to expofe the woman fo foon after delivery; and where the vagina and rectum are torn into one, it is impoffible to ufe the twifted future. This laft cafe is of more confequence, on account of the involuntary difcharge of the fæces: though, in time, the parts by degrees recover in fome meafure their retentive faculty."

CASE VII.—"A woman, from a diftorted pelvis, had loft her child in a former labour, and was in labour of the fecond, which proved tedious alfo. I was called, and juft as the head was delivered entered the room; but as the child ftuck at the fhoulders, I delivered the body in a fucceeding pain. On introducing my hand into the vagina, I was furprifed to find part of it torn from the right fide of the os uteri about three fingers' breadth. The placenta foon followed, after which I again examined and was certain of the laceration, only the rent felt fmaller, and the os uteri was a little torn alfo on that fide. This being at fome diftance in the country, I defired fhe would ftir as little as poffible. I was afraid of the worft from the laceration of thefe parts. The child was dead; but the woman recovered without any bad fymptoms. I delivered her afterwards of another, which was fmall and alive, and I found a large gap or chafm at the fide of the os uteri. I have had fome others, in which I have been fenfible of the os uteri's having been rent; but never found it of bad confequence, unlefs the patient was thrown into a fever by bad management; or other dangerous fymptoms. Thefe might bring on a mortification fooner in the uterus, by the inflammation at that part, in confequence of the laceration."

The modern practitioner will not hefitate to condemn all attempts to unite lacerated furfaces by *future*, or even by any *painful* means of approximating their edges, till thofe edges are in a ftate *capable of union*.

CHAP. II. LACERATION, OR RUPTURE OF THE UTERUS*.

RUPTURES of the uterus may be reckoned amongft the moft fatal cafes which occur in midwifery. The general bad termina-

* Tranfactions of the London Society for Medical and Chirurgical Information, vol. I. p. 184, a communication by Mr. Haden, of Derby.

tion of them has led some practitioners to consider all attempts towards preserving the life of the woman as unlikely to be efficacious. It has therefore been the object of many practitioners to endeavour to save the child, the mother's state being considered as desperate.

Ruptures, or lacerations of the uterus, are, with respect to the child, of two kinds. One, where the child, either in part or wholly, has passed into the cavity of the abdomen: the other, where the uterus has sustained the same injury, but the child has still remained in its cavity. All those symptoms which depend upon the injury suffered by the uterus will be the same in both cases, and they are either such as arise from the violence done to it, or from the hemorrhage occasioned by the laceration, or from other parts being affected in consequence of the injury to the uterus.

Accordingly, independently of the passage of the child into the cavity of the abdomen, it is found that when the uterus is ruptured, the immediate consequence, or attendant circumstance upon the injury, is a sudden sensation of violent pain in the part. Next, the labour pains, though perhaps violent before, cease suddenly: frequently there is hemorrhage, but this symptom depends on the vascularity and extent of the part ruptured, and the situation of the child; because there may be, and often is, a great internal effusion of blood without any external sign of it. Faintness, with debility of the pulse, paleness of the skin, and general failure of the powers of the body, succeed.

Besides all these symptoms, there is another which seldom fails to accompany this disease, viz. a vomiting of a dark brown or chocolate-coloured matter, which appears immediately, or in a very short time after the accident.

It may be affirmed, that all these symptoms in labour never arise in one woman, except from this cause, and therefore where all these are present, even though the child may still remain in the uterus, we are as fairly warranted in believing that there is a rupture of the uterus, as a physician, in a case of inflammation of the pleura, would be from the usual symptoms attending that disease, though he could not see the alteration which had taken place in that membrane.

Case I.—A woman, aged thirty-six, had been married twelve years before she became pregnant. At the latter end of January, 1797, she was taken in labour at eleven o'clock in the morning, with her first child. At ten at night, the labour pains were very strong; and the child's head was in the pelvis, covered by the lower segment of the uterus, the orifice of which was dilated to the size of a crown-piece.

At three o'clock the next morning the head was very little advanced, but the os uteri more dilated. Her pains, which returned every ten minutes, were extremely violent, and increased

both in ſtrength and frequency, till between ſeven and eight o'clock.

The child, notwithſtanding, made no progreſs.

At this time ſhe was ſeized with an excruciating pain, attended with a loud ſhriek; after which ſhe inſtantaneouſly became quite eaſy, and fell aſleep, which ſhe had not done ſince the commencement of labour. After ſleeping about a quarter of an hour, ſhe complained of great ſickneſs, and immediately vomited a large quantity of a brown-coloured matter. This was repeated eight or ten times, without any return of labour pains. Her countenance now became cadaverous, her lips pale, her pulſe frequent, quick, and ſmall, and her whole appearance juſtified the moſt ſerious apprehenſions for her life.

"Having no doubt," ſays Mr. Haden, "from the concurrence of the ſymptoms above related, that the uterus was ruptured, I requeſted a conſultation, and ſuggeſted the propriety of an immediate delivery by the forceps. This was readily aſſented to, and in a ſhort time I delivered her of a living child. The placenta afterwards came away without aſſiſtance. Immediately after delivery an opiate was given.

"In the evening I viſited her, and found that ſhe had ſlept at intervals; but ſhe complained of a conſtant pain in the belly, even when no preſſure was made upon it. Her pulſe was 130 in a minute, ſmall, and quick. An antimonial medicine, with opium, was ordered to be taken every four hours.

"On the following morning the abdomen was much ſwelled and painful, when even ſlightly preſſed. A purging draught was given, which in the courſe of the day produced ſeveral evacuations. The opium and antimony were continued.

"On the next morning, the abdomen was much ſwelled, and extremely painful. The purging draught was repeated, which operated three or four times.

"On the following day ſhe was better in every reſpect, the pulſe was leſs frequent and ſtronger, the abdomen was leſs ſwelled and leſs painful, and ſhe continued from that time to amend gradually.

"By the end of the 6th day the ſymptoms of inflammation having ſubſided, and thoſe of weakneſs being moſt urgent, ſhe took decoction of Peruvian bark for ſeveral days, and by the end of the third week had recovered. She had but little lochial diſcharge, which, after the third day, was more offenſive than uſual.

"I do not think it neceſſary to offer many obſervations on the foregoing caſe.

"My principal object in deſcribing it, is to add another to the very few inſtances of recovery from the accident of a ruptured uterus, and to urge the neceſſity of immediate delivery

in a cafe where delay muft be attended with the worft confequences."

Mr. Haden fays he is aware that there may be fome who may wifh that the rupture had been afcertained by introducing the hand into the uterus, after the delivery of the child. "But," fays he, "I am confident that all practical men will be *fatisfied of its exiftence from the fymptoms defcribed*, and I could not have felt myfelf juftified in gratifying my curiofity at the rifk of the fafety of the patient."

The poffibility of recovery from an accident of this kind will be rendered ftill more allowable from the following cafe of a rupture of the gravid uterus, communicated to the Medical Society of London, by Mr. Kite, of Gravefend.

"Ruptures of the uterus," fays Mr. Kite, "fo very generally terminate in death, that I believe, even at the prefent day, there are many who do not conceive an inftance ever occurred that terminated in recovery; that fuch cafes, however, have really happened, cannot furely be doubted by thofe who have feen Dr. Douglas's account of Mrs. Manning's cafe, and Dr. Hamilton' cafe in his Outlines of Midwifery. Perhaps to thefe may be added, the cafe Dr. Douglas mentions from Heifter, and another from Peu; but befides thefe I do not believe there are on record any inftances, well authenticated, that terminated favourably."

The prefent cafe occurred under the obfervation of Dr. Beugo, of Rochefter, who tranfmitted the account to Mr. Kite.

CASE II.—April 29th, 1791. Mr. Stanton, a gentleman, practifing midwifery in that part of the country, was defired to vifit Mrs. Williams, who was of a relaxed habit of body, about twenty-eight years of age, and in the feventh month of her fecond pregnancy. Nothing material had occurred during the former part of her pregnancy, but a day or two previous to his feeing her a very profufe hemorrhage had taken place, and fhe had flight pains in the region of the uterus.

30th. The pain very materially increafed; the hemorrhage had been very inconfiderable. A clyfter was thrown up, which produced a fufficient evacuation, and a few drops of tr. opii were given in a mixture of nitre and pulv. tragac. c: the pain continued very violent, and towards the evening began to bear down. Upon examination, Mr. Stanton could not difcover the os internum in the leaft dilated.

May 1ft. "On examining at one o'clock in the morning," fays Mr. Stanton, "I found the membranes ruptured, and the os internum fo much dilated, that I clearly difcovered the prefentation of the fhoulder; the hand and arm being fituated behind the child. The patient appearing much exhaufted, and her attendants extremely anxious about her fafety, I folicited the affiftance

of Dr. Beugo; but before his arrival, I endeavoured (during an interval of pain) to bring the arm forward, in order to profecute the turn with the greater facility, which I accomplifhed much fooner, and with greater fuccefs, than I expected. The fœtus was highly putrid, and, from appearance, muft have been fome time dead.

"Waiting in vain for a pain to affift in extracting the placenta, I was forced to introduce my hand into the uterus (as the funis was perfectly rotten) and withdrew the greater part of it. On the fecond attempt to bring away the remainder, I difcovered a very alarming laceration through the pofterior and inferior part of the uterus. Dr. Beugo now entering the room, and examining, expreffed his furprife, feeling diftinctly the inteftines and their convolutions.

May 2d. "The patient much better than I expected, notwithftanding fevere pain about the uterus and abdomen, which I was pleafed to find alleviated by an enema of milk, foft fugar, and oil; fhe afterwards took a mixture of nitre and opium.

"The third day after delivery, the pain great, the difcharge highly tinctured with blood. On the fourth day, the pain very little, the difcharge trifling, repeated the medicine as before. The fifth day, entirely free from pain. From that time altered her plan of regimen, when fhe every day recovered her ftrength, at the end of three weeks purfued her ufual domeftic employments."

This is fucceeded by Dr. Beugo's account of what paffed.

"As foon as I introduced my fingers," fays the doctor, "as as the lower part of the facrum, I met with a large clot of blood, as big as an ordinary egg, which I found, upon the re-introduction of my hand, had lain oppofite to an opening, over which hung a loofe jagged flap; and behind it I met with feveral convolutions of inteftine, which I took between my fingers and thumb, to be afcertained of what they were; in this manner I traced at leaft three convolutions: diftinctly perceiving at the fame time the mefentery, and afterwards I pufhed the whole up with my fingers beyond the middle of the hollow of the facrum; but, on withdrawing my fingers, the convolutions defcended alfo, though not quite fo low as at firft I found them. Through the opening my fore fingers could eafily pass. It feemed to be about the middle of the hollow of the facrum. I afterwards drew back my fingers, and found the cavity of the uterus confiderably contracted above that point.

"In addition to Mr. Stanton's account, I have only to add, that no ficknefs or vomiting came on. She did not complain of faintnefs, and no particular alteration was perceived in the pulfe; in fhort, neither at the time I firft faw her, which was immediately after the rupture muft have taken place, or at any fubfe-

quent period, did she appear to sustain any material inconvenience from the accident. I was, from one circumstance or another, always prevented examining the state of the discharge, but I was repeatedly informed, that it was in proper quantity, that it had the usual appearance, and that no matter was at any time to be perceived. She was ordered a low cooling diet, and such medicines as were calculated to avoid general inflammation.

"She has since had another child at the full time, without any particular disturbance, trouble, or uneasiness, perceptible from the circumstances of the rupture. She thinks the whole process of labour and recovery, with this last child, was in all respects like that with the first child; and that her recovery in both these was not so speedy, nor to so complete a state of strength and health, as it was in less than three weeks after that in which the uterus was lacerated.

"She always before was subject to a considerable degree of fluor albus, and has been with no remarkable degree of difference still subject to the same."

A case of the uterus lacerated by the force of labour pains, by Mr. Hooper, a practitioner in London, published in the same work, proved less successful.

Case III.—"A gentlewoman, who was taken in labour about four o'clock in the morning," says Mr. Hooper, "sent for me in a great hurry about eight. She had had three children before, and (though she had been attended at different times by two eminent practitioners) they were all still-born, from the difficulty of her labours; she being very corpulent, her pelvis narrow, and children large. Upon entering the room, I found her in very strong pains; and by the touch perceived the membranes pushed to the middle of the pelvis, but rather of a conical form. I could easily feel the os internum towards the pubis, but a great part of its segment towards the sacrum was out of the reach of my finger; nor could I feel any part of the child presenting. In about half an hour the membranes broke, as she took a strong pain sitting on the close-stool, and a great quantity of coffee-coloured water was evacuated; her pains still continuing very frequent and strong. I then examined again, but could still find nothing presenting. In about an hour more I could just feel the child's head high up at the brim of the pelvis; but still finding the vacancy in the os internum, I attributed it to a laceration which might have happened in one of her former severe labours. I therefore encouraged her to wait with patience till the head should further advance into the pelvis, when I flattered myself there might be a chance at least to save the child with the forceps; to which end I kept her as quiet as possible, supporting her with broth, and, as she complained of great thirst, some balm tea occasionally. But though the pains continued strong, with (as she called it) a tearing

sensation in her back, even in the intervals of the pains; yet, as I examined from time to time, I could not perceive the least advance, nor indeed did the head, during a pain, seem to be at all protruded. About four in the afternoon she said the pain had entirely left her back, and was wholly in her belly and thighs, with continual nippings withinside her belly. After this, upon touching, I found the head rather higher than before, which disheartened me not a little, especially as her pains began to abate considerably. I then, the more thoroughly to satisfy myself as to the situation of the head, introduced my left hand, and with my fingers, in a flattened form between the head and sacrum, felt the left ear. In doing this I did not meet with the least pressure from the child's head, which was quite disengaged; nor could I even now feel the posterior part of the os internum. Being, however, satisfied as to the position, I withdrew my hand, the pains still growing less frequent and weaker; but she lamented greatly the nippings and pinchings in her belly, which rather increased as the true labour pains decreased. She had frequent retchings, but brought up nothing except wind. Some time after, upon touching during a pain, the head was not to be felt. I then desired her to sit on the side of the bed a little while; after which I again examined, and found it just as before. Upon considering this circumstance, with the state of my patient, who was now much lower and fainter than she had been all day, that some small hemorrhage, which at times had appeared from the beginning of her labour, was now increasing, that the pelvis was narrow, and the child probably large, I began to despair of the child, and was very uneasy on the mother's account; I desired, therefore, that another of the profession might be called in, before any step was taken respecting the delivery. Accordingly Dr. Griffiths (who had delivered her before with the crotchet) was sent for, and came about eight o'clock in the evening. The doctor having acquainted himself with the situation of affairs, and considering that, as the child's head was so high up, no attempt could be made with the crotchet, as in her former labours, the head then being fixed in the pelvis; that as her children were formerly large, and the pelvis small, much difficulty and danger must attend turning; and that our patient's condition would not admit of much delay, from which no benefit could be expected; and as her pains were now quite gone, and succeeded by a great faintness, the case appeared extremely unhappy and dangerous. However, as something must be done, we concluded to turn, if possible, and deliver footling; and this we were the more encouraged to do, as the doctor, upon examining the abdomen, felt two distinct substances, which he said he was in hopes were two children, and consequently smaller than if only one. I therefore, as she lay on her left side, introduced my

hand, on account of her belly being rather pendulous; and as the face of the child was to the right ilium, I paſſed my hand over it, and along its belly, till I reached both the feet: and this I did without feeling that ſtricture which the uterus generally cauſes upon the hand, when the waters have been for ſome hours evacuated; inſtead of which I met with ſome little embarraſſment, from my fingers being entangled with a looſe floating ſubſtance; which, however, I did not much attend to at that time. I told the doctor that I felt that body (as my hand paſſed along) which he hoped was another child; but which to the touch did not ſeem to be ſo. I felt likewiſe a ſtronger pulſation at the vertebræ lumborum, than I had ever obſerved in any ſuch delivery. But though I brought the feet down to the os externum without much difficulty, yet it was not without many efforts, both from the doctor as well as myſelf, with change of poſture ſeveral times, that we delivered as far as the nates. And though we now and then ceaſed operating, and ſupplied our patient with frequent ſuppings of wine and water, yet ſhe ſunk ſurpriſingly, grew inſenſible, clammy, and died about ten o'clock the ſame evening; at a time when we were in great hopes of completing the delivery.

"The next morning I was deſired to open the body, in order to take away the child. Upon making my inciſions in the uſual manner, a large quantity of blood flowed off; and the firſt part that preſented itſelf immediately under the peritonæum was the uterus, whoſe fundus reached to within about a hand's breadth of the navel, and whoſe ſize was that of a man's two fiſts. On examining its ſurface, I perceived a laceration towards the ſacrum from the os internum, to more than half way to the fundus. Under the uterus lay the child's head and ſhoulders, with its face to the left ilium, one arm over the pubis, and the other at the ſacrum. I then took out the child from the ſituation in which we had left it the preceding night, which was of a monſtrous ſize, of a livid colour, and with the cuticle in many places peeling off. I next drew out the placenta, which was quite looſe in the abdomen, detached from the uterus."

From theſe appearances, joined to the circumſtances of the labour, it was clear that the laceration of the uterus was begun before the membranes broke, and increaſed by the pains, till the child, with the placenta, was entirely expelled into the cavity of the abdomen.

CHAP. III. INVERSION OF THE UTERUS.

Amongst the accidents which occaſionally ſucceed labour, is the inverſion of the uterus. Of this the following caſe, com-

municated to the Medical Society by Mr. Browne, of Camberwell, is a very decisive instance.

CASE. I "Elizabeth Emmett, the subject of the following history," says Mr. Browne, "is a woman of a good habit of body, and tolerably well proportioned. She sent for me to attend her in labour, between two and three o'clock in the morning of Monday, Sept. 19, 1796. Upon examination, I found the os uteri gradually dilating, to the extent of an half-crown; but, as I could not then ascertain the presentation, and as her pains had nearly subsided, I requested her to rise, and walk about; which soon obliged her to resume her former situation on her bed, and about nine o'clock, A.M. a rupture of the membranes took place, and it appeared clearly to be a footling case, which I delivered in the usual way. The child was dead, and in a very sphacelated state: after the fœtal delivery some pain ensued, and, by a very slight effort to extract the secundines, the funis broke, it being also very putrid. The pains, however, not only continued, but became more excessive, with a degree of bearing down hardly to be conceived, and an actual inversion of the uterus, with the placenta completely adhering, took place. The dangerous state of the patient admitted of no delay; and having considered whether I should separate the placenta, and return the uterus, or reduce both together, on passing my finger round the placenta, finding it in no part detached from the uterus, I determined on returning them together, and happily succeeded.

"During this time no hemorrhage ensued, and I was therefore very averse to excite one, which a hasty separation of the secundines, in that relaxed state of the uterus, must have occasioned; having therefore waited a considerable time (the patient being as little disturbed as might be expected, considering what had occurred), I endeavoured to impress on the minds of the friends present, that no inconvenience would result: I gave her an anodyne, and directed proper nourishment, and such febrifuge aperient medicines as were requisite to prevent inflammatory symptoms, which, indeed, did not intervene; and on Thursday, Sept. 22 (in the evening), four days from the time of her delivery, a sanguineous discharge, to no great degree, took place, which gave me hopes that the contraction of the uterus was spontaneously occuring: the expulsion of the burden (which I anxiously waited for) happened on Friday the 23d, after a retention of five days, and at this time (now more than a month from her being put to bed) she has every appearance of recovering as favourably as in any of her former labours, she having thirteen children.

"The death of the fœtus (by the mother's account) appears to have taken place about the 20th of August, she having on that day accidentally received a severe blow on the abdomen, and never felt it from that period; she experienced, however, no

material inconvenience from it, nor did I hear any thing of this circumſtance till the time of her labour. The fœtus and funis, as before obſerved, were highly putrid and offenſive; the placenta, on the contrary, was perfectly ſound, and had acquired its original ſize, no doubt, from the maternal circulation being continued till its expulſion."

CASE II.—The following caſe of inverted uterus is publiſhed by Dr. Welſh, of Chelmsford, in the Medical and Phyſical Journal.

"In July laſt," ſays he, "I was requeſted to attend a young married lady of delicate frame and habit, and who was far advanced in her pregnancy of a ſecond child. Shortly after, I was ſent to, and informed ſhe had been unwell ſome hours, with trifling pains, which her friends were apprehenſive would terminate in labour. Upon my arrival, I found the os tincæ open, and the head of the child low down, preceded by the membranes, which protruded in the form of a ſmall bag, diſtended by the liquor amnii. As her pains had not been ſtrong, but recurred at ſhort intervals, the os uteri had dilated gradually, and the labour advanced ſlowly; but by rupturing the membranes, the waters were evacuated, and her pains growing ſtronger, ſhe was, in about two hours after, delivered. On dividing the funis to remove the child, I was extremely ſurpriſed to find the uterus completely inverted, and lying without the labia, on the thigh, with the placenta firmly adhering to its fundus; and my patient low and weak, with ſickneſs and frequent fainting fits. I could not but feel ſenſibly the danger of her ſituation, of which I appriſed her friends, and expreſſed a wiſh that a friend of mine in the town (Mr. Bird), who deſervedly poſſeſſes the higheſt character for profeſſional abilites, might be alſo employed; but as ſhe declined any other aſſiſtance, I endeavoured to ſeparate the placenta, which was ſoon effected, and as the veſſels did not bleed much, the uterus was returned without any very conſiderable hæmorrhage; but as her fainting fits and ſickneſs continued with a low and weak pulſe, which was at times almoſt imperceptible, I directed a cordial draught to be given, with tinct. opii et liquor vol. cornu cervi, aa, gtt. xx. and in the courſe of a very few hours had the ſatisfaction to find her tolerably eaſy, more cheerful, and her pulſe conſiderably ſtronger. On the following morning I ſaw her, and found ſhe had paſſed a quiet night, though without ſleep; had ſuffered but little from the after-pains, and was free from fever, but with great languor and debility: her ſickneſs and faintings had not recurred. I directed a continuance of cordial medicines. The next day ſhe was conſiderably amended, and eaſier; had ſlept during the night; had paſſed urine without pain, and did not complain of uneaſineſs in the parts. Her pulſe was much ſtronger; and the uterine diſcharge not more copious than is

usual; nor did she experience a much greater degree of inconvenience than generally results from labour to delicate women; but as she had not had stools, I directed an enema to be administered, which had the wished effect.

"From this time she continued rapidly to mend; and by taking the bark in as light a form as her stomach would bear, was soon enabled to use exercise, and restored to her former state of health.

"On enquiry, I learned the inversion was to be attributed to a naturally lax habit, and the placenta having been too forcibly extracted at a former period; a circumstance I was not acquainted with till some days after her delivery.

"I have the pleasure to add, my patient enjoys good health at present, and feels no particular inconvenience from an accident so alarming, and to which she will most probably be hereafter subject on those occasions."

CASE III.—The following case of an inverted uterus was communicated to Dr. Smellie by a practitioner at Pontefract.

"In April last," says he, "I was called to a woman just delivered of a living, healthy child; and to my surprise found the uterus totally inverted, lying betwixt her thighs, of the size of a large foot-ball.

"The woman's pulse was weak and unequal, and there was a continued pouring forth of blood from the vessels of the uterus.

"I apprised the friends of the great danger of so deplorable a case. Nevertheless, with the approbation of a judicious physician, her neighbour, I undertook, and succeeded in, the reduction; and after gave her gentle anodyne and cordial medicines, and left her in appearance better, and tolerably easy.

"In about half an hour, I was again called, and found her speechless, the pulse imperceptible, clammy sweats, respiration deep and slow, and in a few minutes death closed the scene.

"All the parts were so lax, that the uterus had not the power of contraction; for it was lying like a loose piece of tripe, and taken for an excrescence, till I examined it more strictly, and, after separating the placenta, reduced it into the abdomen."

Giffard, in his Cases of Midwifery, also mentions a delivery in which the uterus was inverted, and drawn out beyond the labia pudendi, with the placenta adhering to it.

Chapman (p. 197, case 29) has a case also of the inversion of the uterus.

Monf. Lamotte (lib. 5, chap. 10, 11) describes an inversion of the uterus, and relaxation of the vagina.

Dr. Smellie was called to a woman, who died before his arrival. He found the uterus inverted, pulled quite without the external parts, and the placenta adhering firmly to the fundus.

This misfortune, it ſeems, was occaſioned by the midwife's pulling at the placenta with too great force.

CHAP. IV. PROLAPSUS OF THE UTERUS, &c.

THIS happens when the womb falls down through the relaxed vagina, and appears externally in the form of a tumor.

It has been the common opinion, that the womb is retained in its natural ſituation by two ſorts of bands or ligaments peculiar to it, and that this diſorder is occaſioned by weakneſs of thoſe parts; but, from the moſt particular examination, they appear to have very little ſuſtaining power; and experience ſhews, that a deſcent of the womb may happen without any fault of thoſe ligaments.

But, allowing they were affected and their ſtrength impaired, even then the womb could not poſſibly deſcend to the external parts, without an uncommon dilatation or enlargement of the vagina; and, on the contrary, ſo long as that part is endowed with ſufficient reſiſtance, no bearing down could poſſibly follow, although the ligaments had loſt their ſuſtaining power.

The principal cauſe at leaſt of this diſorder muſt therefore be, a preternatural weakneſs and enlargement of the vagina. Hence it may proceed from any cauſe which tends to relax the vagina, and render it ſo weak as to allow the womb, in whole, or part, to intrude or preſs down through its enlarged cavity: when the firſt happens, it is called a *deſcent of the womb*; but if only the laſt, it is termed a *bearing down.*

In whatever degree this diſorder prevails, it will always be rendered worſe by the upright poſition of the body; for then, the weight of the womb reſts more immediately upon the affected part. And if, to this principal cauſe of the diſeaſe, other accidental cauſes are added, ſuch as a laxity of the ſuſpenſory ligaments, cough, ſtraining to lift heavy weights, or any violent effort of the body, which acts immediately on the womb, it will then be aggravated, and rendered more difficult of cure.

Agreeably to thoſe circumſtances, a bearing down, and ſometimes an entire deſcent of the womb, happens in conſequence of hard labours, where the fibres of the vagina have been ſo overſtrained as not to be reſtored to their natural ſtrength and firmneſs, eſpecially in women of delicate conſtitutions; on the contrary, virgins are ſeldom affected with it, except they are of a habit of body uncommonly lax and weak, or where the womb is in a diſeaſed ſtate.

The *fluor albus* (ſee vol. II. p. 237) alſo diſpoſes women to this complaint, becauſe the parts contiguous to the womb gra-

dually lose their resisting power, by the continuance of the discharge, which not only exhausts the strength, but so macerates and relaxes their fibres, as to render them preternaturally soft and yielding.

The disorder called bearing down is generally slight at first, producing an uneasy sensation, as if something was pressing upon the affected part; but, where there is an entire descent, the symptoms are much more severe; for the bladder, being connected with the uterus, is then pulled down with it, and this occasions a difficulty of urine, attended with pain.

This inconvenience may be remedied by pressing up the tumor, when the patient is placed, with her head low, upon a bed or couch, so as to restore the bladder to its natural situation, which is a much more proper and eligible method than that of passing the catheter to draw off the water; since, in this particular case, the instrument would meet with great resistance, and occasion excessive pain and inflammation of the urinary passage.

When the tumor is large, and descends so low as to appear externally, it is apt to swell and ulcerate; but this does not proceed, as generally supposed, from the acrimony or sharpness of urine diffusing itself over the tumor, but from the strangulation of vessels at its upper part, by which the course of blood is obstructed, even sometimes to such a degree as to produce mortification.

The descent of the womb is attended with many circumstances of the most distressing nature to delicate women, who, unfortunately, are most subject to it.

In bad habits of body, there have been instances where it ended fatally, by producing a scirrhus or cancer. In a word, it hinders the regular returns of the menses, brings on fluor albus, prevents conception, and, at last, by perverting the natural functions of the womb, destroys the constitution.

It will therefore be prudent for every woman, who at first perceives a bearing down, to consider it as the forerunner of the disorders already mentioned, which might be prevented by applying for relief before the disease is rendered incurable from its long continuance.

The intention of cure will be, to *replace the womb*, to strengthen and brace up the vagina in particular, and the solid system in general.

When the disorder is of a late date, the two first intentions may be effected by placing the patient on a bed or couch, with her head low, and then gently pressing up the tumor till it is returned into its natural situation. She should afterwards continue, as much as possible, in the same recumbent position; and the cooler she is kept the better. By such means the uterus will

retire from the weakened part, and be relieved from the superincumbent pressure, which it must otherwise sustain from an upright position of the body.

When the tumor is large and of long standing, attended with pain and inflammation, the patient should be bled, and emollient poultices of bread and milk applied twice a-day to the part affected, before any violent means are used to replace it; previous to which, the bowels should be emptied by a purging clyster, and the urine evacuated from the bladder. Should the reduction of the tumor prove difficult, it may be attempted whilst the patient is immersed in a temperate bath, in which she may be placed with her shoulders lower than her hips.

After the tumor has been reduced, the intention of contracting the relaxed vagina, so as to prevent its future descent, may be effected by the frequent use of some astringent injection, and by giving more strength and firmness to the whole bodily system. Nourishing diet, the remedies prescribed in treating on fluor albus, together with the waters of Tunbridge or Spa, will contribute most to this end. The use of the cold bath will also be extremely beneficial, where the lungs and internal parts are free from disease.

This gentle method, pursued with steadiness and patience, will at last generally effect a cure, by restoring the weakened parts to their former strength, particularly as there is a natural tendency in all the solids of the body to contract and regain their usual firmness, when freed from the stress and violence of such causes as before had diminished their power.

Some authors forbid the reduction of the tumor, when ulcerated, till after the sore has been healed; but this practice is neither founded on reason nor experience, for it must be impossible permanently to heal the ulcer whilst the part remains out of its natural situation, and its vessels are in a strangulated state; on the contrary, being replaced, it will naturally heal without any other assistance than that of a little barley water, thrown up as an injection to keep the ulcer clean.

A simple bearing down is sometimes cured by pregnancy, from the effect of which the womb enlarges, and will be gradually pressed upwards and reinstated; however, after delivery, it generally returns with an aggravation of the symptoms. It may therefore be prudent for the patient to keep her bed the longer on that account; and, more effectually to prevent a relapse, it will also be requisite to use the same strengthening medicines as have been directed in the cure of that disorder, and to wear the T bandage a few weeks after her going abroad.

In this complaint all violent efforts of the body should carefully be avoided, such as vomiting, coughing, sneezing, &c. also tight lacing, or whatever compresses the belly and affected parts.

The ſame regimen as that recommended in fluor albus, reſpecting air and diet, will be neceſſary.

The curative method here laid down being directed to the ſeat of the diſorder, is preferable perhaps to the application of peſſaries, though the latter are often made uſe of with good effect.

The objections to the uſe of theſe inſtruments ſeem to be the following: If the peſſary introduced be too ſmall, it will ſoon be forced away by the firſt fit of coughing or ſtraining; and if too large, it will become ſo painful as not to be endured. The utmoſt attention is neceſſary, therefore, to adapt the peſſary, when reſorted to, exactly to the dimenſions of the part and the elaſticity which the vagina may poſſeſs. It is alſo of conſequence that it ſhould be made of the lighteſt materials, ſuch as cork wood, thoſe of box or ivory being much too heavy to be retained.

Should the diſpoſition to a deſcent of the uterus be diſcovered early in any caſe, ſo as to prevent the patient from walking without inconvenience, a fine ſponge, wrung out of alum-water, may be dried in a compreſſed ſtate, and cut into any convenient form, ſo as to be introduced as high as poſſible. This application will not only act by its aſtringency, but alſo by its preſſure, though in a much more gentle and uniform manner than any kind of peſſary made of harder materials. The ſponge, however, ſhould gradually be made ſmaller, from time to time, as the vagina contracts; and a T bandage may be worn, the better to retain it, and to ſecure the patient from a relapſe.

The following caſes, recorded by Dr. Smellie, whilſt they convey his opinion as to the uſe of the peſſary, are at the ſame time deſirable, as ſhewing the conſequences of prolapſus under urgent circumſtances, and pointing out the treatment required.

Case I.—This misfortune happened to a woman ſoon after a tedious labour, which gave her great pain. A round middle-ſized peſſary was introduced, and turned ſo that the lower edge reſted at the lower and back part of the vagina, betwixt the os externum and fundament, while the upper edge was ſupported againſt the inſide of the os pubis: the mouth of the womb lay againſt the lower edge of the round hole of the peſſary; this kept up the uterus and vagina, and relieved the complaint. Two or three months after ſhe was with child, and when five months gone, the peſſary was taken out, becauſe it was thought needleſs to keep it there any longer, eſpecially as the uterus was ſo large as to be ſupported by the upper part of the pelvis. The peſſary, inſtead of lying in the ſame poſition as when firſt introduced, was found lying up along the back part of the vagina, which it kept up, and the mouth of the womb hung down on the fore part of the peſſary. This circumſtance gave the firſt hint that a peſſary introduced, and laid in this poſition, was the beſt method

of keeping up the uterus; for, if the vagina is kept up, the uterus must in consequence be kept up also. The upper part of the vagina is attached round the lips of the mouth of the womb, and as the uterus naturally sinks down into the vagina, one great advantage to married women is, that this method does not hinder them from cohabiting with their husbands. After the pessary was withdrawn, the prolapsus of the vagina returned, and occasioned the former uneasiness. It was again introduced, and laid up along the back part of the vagina as in the last method, which kept up the vagina as before, until she fell in labour, and then it it was forced out at the beginning of the pains. She was at last safely delivered. The vagina on the fore part, at the os pubis, was very lax, and came down before the head of the child; but by cautious management it was kept up till the head came along, and then it was slipped behind the same. She continued to recover very well till after the fifth day, and suckled the child; but an accident happened in the family, which threw her into violent agitations; a vomiting and looseness ensued, the lochia and milk disappeared, and she died in five days after, though the vomiting and diarrhœa were restrained.

CASE II.—This was a case of prolapsus uteri, in a woman with child, delivered in the middle of the seventh month.

A middle-aged woman had a prolapsus uteri. She had been formerly delivered of a child or two at the full time, and after that miscarried twice, about the third month each. She again was pregnant, and at the end of the second month had a small discharge of blood from the vagina. She was blooded, and kept her bed several days, by which it was restrained. The same discharge returned the third and fourth month; at first in large quantity, but the last very inconsiderable. "Being called to her a fortnight after," says Dr. Smellie, "or about the middle of the fourth month, I found her in violent pain. On examining, I found the uterus was pushed entirely out of the os externum, bigger than a man's fist. This had been occasioned by a violent fit of coughing. The vagina felt as if it was about an inch protruded before the os internum; and all the vagina appeared to be inflamed and swelled. I introduced my finger at the protrusion of the contracted vagina, which was just large enough to receive it a little way: but I could neither distinguish the os internum, nor any substance contained in the uterus. It might have been the os internum opened, but of this I was uncertain: from hence it seemed probable, that she was not with child. The prolapsus was reduced with some difficulty; two days after, a round middle-sized pessary was introduced, and fixed up along the back part of the vagina; so as that the upper part of the vagina and os internum hung down before it. She had

before this period, for two or three months, a large discharge to appearance of the fluor albus, and the uterus had prolapsed in that space three or four times; but being then smaller, she could easily reduce it herself. It being uncertain whether she was with child or not, although, from considering all the former circumstances, the last seemed more probable, it was resolved to order only a cooling regimen with some saline draughts, and nitrous medicines till the next period. By these means the cough and discharge of the fluor albus were removed; she seemed to be perfectly easy, and was allowed to walk about in the house. At the end of the fourth month she had to appearance a regular discharge of the menses: the mouth of the os internum felt swelled and more shut; a circumstance which made it almost certain that she was not with child. Being sent for in great haste, about the middle of the seventh month, I found she had regular labour pains; the os internum was so open that the membranes, waters, and head of the fœtus were regularly felt; and there was no discharge of blood. As the os internum, though a little open, instead of being thin or soft, felt thick and hard, it was advisable to order first bleeding to the quantity of eight ounces, after that two emollient clysters were administered, which discharged a large quantity of fæces, and then an anodyne draught was given.

"The salt of wormwood draughts were repeated with a cooling regimen; such as panadas, weak broths, emulsions with sal. nitri, and boiled chicken. The pains went off for twenty-four hours, after which they returned; the os internum now felt much more open and soft; the membranes were pushed down with the waters. It was then more proper to let the labour go on. The fœtus was soon delivered: after which there was some discharge of blood. No violence was used to bring away the secundines. As the placenta separated from the uterus, the discharge increased, but not to any large quantity; and in three hours the secundines were forced through the os internum into the vagina. By pulling softly at the funis, and at the edge of the placenta, with two fingers, they were easily extracted. She recovered very well. She had for two days some difficulty in making water, but that complaint went off. The child was very small, and was reared with great difficulty."

Case III.—This case of a prolapsus uteri, which could not be reduced, but mortified, was communicated by a surgeon of Birmingham to Dr. Smellie:

"I was called," says the writer, "to a woman near this town. I found her in bed, and she gave me the following account of her case. That assisting her husband in lifting a weight that afternoon, she felt a lump fall out of her body; on which she sent for a midwife, who endeavoured to restore it into its place; but not

being able to reduce the ſame, adviſed to ſend for me. Upon examination, I found the uterus out of the os externum, about the ſize of a large man's fiſt, hard, and the glands ſchirrous, each having the exact appearance of a garden bean. The patient was low and faint; had but little pains. As a reduction was impracticable, I immediately directed emollient and diſcutient fomentations with poultices, and after ſome days bled her in a ſmall quantity, for ſhe was too weak to bear the loſs of much blood. Her body was kept open, and, when reſtleſs with pain, quieted with opiates. Notwithſtanding theſe it increaſed in ſize, and after three weeks diſcharged a thin ichor from its whole ſurface, and in about ſix weeks the patient died."

Case IV.—The following caſe of a prolapſus, attended with mortification of the uterus, was communicated by Mr. Primroſe, of Wrentham, lately, in a letter to Dr. Haighton.

"The woman who affords the following ſubject," ſays Mr. Primroſe, "before ſhe became pregnant, laboured under a partial prolapſus uteri, the appearances of which gradually ſubſided when ſhe became pregnant; and during her latter months complained of nothing more than forcing pains towards the os ſacrum (I ought to obſerve that this woman was of a very weak conſtitution, and that this child was her tenth); her labour came on ſuddenly, was a breech preſentation, but the natural pains were quite ſufficient for its completion. After waiting the uſual time after delivery, and no pains following, I was induced to examine; upon which, to my ſurpriſe, I found a conſiderable protruſion of the uterus, which led me to ſend for my father, who adviſed me to attempt the extraction of the placenta by introducing my hand, with a view to extricate it; at the ſame time my hand aſſiſted the return of the uterus, by preſſing at the fundus, during the time that my left hand was aſſiſting the ſeparation of the placenta at the funis. From there being ſuch a conſiderable adheſion of the placenta, I did not ſucceed in obtaining all of it the firſt time; on proceeding to make the ſecond attempt (which we thought juſtifiable, not only for the obtaining what remained of the placenta, but with a further view that the return of the uterus might be effected by the hand being carried to the fundus), to my great aſtoniſhment I found a deſcent of the whole body of the uterus; after this the patient gradually ſunk: however, attempts were immediately made for its reduction, as far as were thought prudent, as the woman appeared almoſt exhauſted. She did not revive ſufficiently to encourage me to make further attempts till gangrene had made its appearance, which was in the ſpace of forty-eight hours.

"Had this woman not ſunk ſo immediately after the ſecond deſcent, I am ſenſible I could not have ſucceeded in the reduction; not only from the protruſion being ſo conſiderable, but

from the firmneſs, or tenſion, being ſo great as not to yield to compreſſion. Mortification and putrid fever increaſed rapidly; fomentations, &c. were ordered, and the patient was ſupported with bark and every requiſite cordial, and fomentations were continued till ſuppuration took place, which was complete, in the greateſt portion of the prolapſed part, in ſeven or eight days; what remained diſcharged a great deal, and gradually waſted, as her health improved, and what remained at laſt ſpontaneouſly retracted.

"It is five or ſix months ſince this woman was under my care; and I have now the ſatisfaction of adding that ſhe enjoys much better health than before ſhe became pregnant."

CHAP. V. INFLAMMATION OF THE PUDENDA AND NEIGHBOURING PARTS.

AMONGST the conſequences of ſevere labour, are the inflammation of the parts concerned, followed ſometimes by ſuppuration and yet more formidable appearances. To the young practitioner the hints contained in the following caſes, by Dr. Smellie, may not be unacceptable, even though the treatment be not exactly conformable to the practice of modern times.

CASE I.—A woman complained, after the third day, of a pain and hardneſs in the right labium pudendi. On examining and enquiry, the doctor found the ſwelling and pain began to be perceived only the night before. He ordered fomentations to be applied, wrung out of a decoction of poppy heads and emollient herbs, and to be repeated frequently. In the intervals he directed the attendants to anoint the parts with ung. ſambuci, by which method the ſwelling ſubſided, the pain abated, and in four or five days diſappeared entirely.

CASE II.—The day after a ſevere and tedious labour, the external parts of a woman in her firſt child were ſo exceſſively ſwelled, that ſhe could neither make water nor go to ſtool, although ſhe had an inclination, and had tried frequently. The ſame method was taken as above, only, inſtead of the emollient ointment, a large poultice of bread and milk was applied and renewed after each fomentation. Next day the ſwelling was ſo abated, that the patient made water freely, and went to ſtool; and the whole complaint, by the continuance of thoſe applications, went off by degrees, ſo that the woman recovered.

CASE III.—"I was called by a midwife," ſays Dr. Smellie, "to a woman, the fifth day after delivery. The labour had been tedious and ſevere, occaſioned by a large child; the external parts were very much ſwelled and livid; the pain from the inflammation had been very great, but was then a little abated; a circumſtance which

made me afraid that she was in danger of a mortification: however, I was in hopes, from her having had a plentiful discharge of the lochia, which still continued, that the uterus was not affected. She had also made water several times, although with difficulty; but had no *stool*. *After she was relieved by a clyster, I ordered a fomentation, with which the parts were frequently fomented.* An emollient cataplasm of bread and milk was applied; after every fomentation the swelling and pains abated more and more. About the ninth day several mortified sloughs cast off, both from the labia and vagina. The cataplasms were continued, and a large dossil of lint was kept in the vagina, to prevent contraction, or a coalition of its sides. The patient recovered."

CASE IV.—This was an inflammation of the uterus and neighbouring parts.

"Being called," says Dr. Smellie, "to a woman on the third day after delivery of her first child, and finding that she complained of much pain and hardness above the pubis, I examined the abdomen with the hand below the bed-clothes, and found the substance of the same harder and larger than it usually felt. I was certain that it could not be from any distension of the vesica urinaria, because she had made water frequently. I was told that the labour was long and tedious: that she had in time of it pressed her belly against the lid of a high chest; that she complained of the pain immediately after delivery, and was in torment ever since.

"I was much surprised to find that, although the pain had prevented sleep, yet there had been and still was a plentiful discharge, and but little fever. I imagined that the complaint proceeded from the external parts that had suffered from a contusion, by the imprudent forcing them against so hard a substance: her pulse being a little quick, she was blooded in the arm to the amount of about six ounces. An emollient clyster gave her a plentiful stool; the abdomen was fomented, and a poultice was laid all over the abdomen.

"These were the only remedies then to be had. I gave her ten grains of the pil. Matthæi; she had a pretty good night; but when the effect of the opiate was over, the pains returned in the morning. The abdomen was again stuped with a decoction of the emollient herbs, and a cataplasm of bread and milk applied. These were repeated twice a-day, and in two days more, the pain, tension, and hardness, abated, and the patient recovered."

CASE V.—In this case an inflammation was supposed to exist in the right ovarium and ligaments of the uterus.

"I was called," says the doctor, "to a woman on the fifth day after delivery. She told me, that the midwife gave her great pain in tearing (as she called it) the placenta from her right side; and that she had sent for me to examine a swelling there, which she felt with her hand. She was a lean woman: I felt the uterus contracted

like a round ball, but on the right ſide a ſubſtance about the ſize of a gooſe egg; from this proceeded a round and long ſubſtance, about the thickneſs of two fingers, which ended at the groin of that ſide: the examination of theſe particulars gave her great pain. Much the ſame method was uſed to this woman as in the former caſe, viz. venæſection, clyſters, fomentations, and emollient cataplaſms; beſides proper management as to her diet and regimen, and keeping her in breathing ſweats. The ſwelling on the right ſide diminiſhed; but ſhe was not free from pain till after the twentieth day."

Case VI.—This is another inſtance proceeding from much the ſame cauſe.

"A gentlewoman in her ſecond child," ſays Dr. Smellie, "had been delivered by a male practitioner, who gave her great pain in delivering the placenta; and this had continued leſs or more afterwards. I was beſpoken to attend her in the next labour, when ſhe had an eaſy time; the placenta came down of itſelf, but, in order to ſatisfy her and myſelf, I introduced my hand into the uterus to examine. I found all ſound on the inſide; nothing of any kind of tumor, hardneſs, or unequal contraction, to account for the violent pains that ſhe formerly complained of. By proper care and management ſhe recovered, and was free of her former pain for four weeks, which afforded great hopes of a perfect cure; but it afterwards returned with as great violence as before.

"I have delivered her three times ſince, and her labours have been ſafe and eaſy. She was always free from the pains for three or four weeks after. It is alſo remarkable that ſhe was always eaſier when with child.

"The pains were moſtly on the right ſide towards the groin, but they extended quite round her back and loins. The principal phyſicians in London were conſulted from time to time; and ſhe tried many different remedies, including the cold and hot baths, with all kinds of anodynes and evacuations, but ſhe was not in the leaſt relieved; neither could any of the profeſſion find out the cauſe of the excruciating pains, which in general paſſed for a nervous rheumatiſm.

"Finding her free from theſe pains after delivery when ſhe kept in bed, and before ſhe went abroad, I, after the next delivery, kept her longer in bed, and in breathing ſweats; but, notwithſtanding this caution, the pains returned, and did not abate of their violence till ſhe was again with child."

Case VII.—The following caſe of pſoas abſceſs ſucceeding labour is communicated by Dr. Denman to the editors of the Medical and Phyſical Journal.

"In July, 1798," ſays the doctor, "I was deſired to viſit a lady, of whoſe caſe I received this account:—

"On June the 10th ſhe had been delivered of a dead child,

between the feventh and eighth month of her pregnancy, when fhe fuffered very acute pain in the extraction of the placenta, which was thought neceffary. For feveral days previous to her delivery fhe had a confiderable degree of fever, and much general uneafinefs over the abdomen, for which fhe was bled, and took fome cooling and quieting medicines. On the 12th (the fecond day after her delivery), fhe had a ftrong and violent rigor, fucceeded by very fevere pains in her left fide, near the fpine of the ilium, and fever, which continued for feveral days, when her milk (before fecreted) entirely difappeared.

" Though the pain and fever were abated, they never entirely left her: and after another rigor on the 19th, with an increafe of fever and pain in the part firft affected, her friends were alarmed, and a phyfician of eminence was defired to fee her. He prefcribed what the fituation and circumftances of the patient feemed to require, and fhe was much relieved. There were, however, frequent exacerbations of fever; the pain of which fhe originally complained never entirely left her, and was fometimes violent. It was now perceived fhe had no power of moving her left leg or thigh, and fhe herfelf was fenfible of a deep-feated fwelling on the left fide of the abdomen, though it could not be difcovered by her attendants. A blifter was applied to the whole of the pained fide; and after fome days' farther attendance the phyfician withdrew, recommending her to go into the country, and encouraging her to hope that, as fhe recovered her ftrength, her complaints would leave her. She was alfo advifed to ufe as much exercife as fhe could, and accordingly attempted every day to walk with a crutch, and the help of her nurfe; but every attempt gave her excruciating pain, and fhe was daily fenfible of lofing, inftead of gaining, ftrength.

" I firft faw her on the 28th of July. As there was an evident fulnefs on the left fide of the abdomen, with much pain on preffure, lofs of appetite, and other fymptoms of fever, from fome degree of which fhe was, in fact, never entirely free, I directed three or four leeches to be applied to the part affected, and to be repeated every other day, and fuch medicines as were likely to abate the fever, to keep the bowels gently open, and to moderate the pain. She was fomewhat relieved by thefe means; and as fhe was very weak, I tried the bark, and fome other tonic medicines, from which fhe did not apparently receive any benefit. From the contraction and wafting of the limb, and from the other circumftances before recited, thinking it probable that an abfcefs had begun to be formed in fome part of the cavity of the abdomen, I requefted to have a confultation, and Dr. Baillie was called in. After a mature deliberation on all the preceding circumftances, and the prefent ftate of the patient, it feemed moft reafonable to think that an abfcefs was forming in the pfoas mufcle. Small dofes of cicuta in the faline draughts were prefcribed, and a foft plafter with opium was applied to the

side; the case of the patient seeming to admit of little other relief than some alleviation of her suffering. In the middle of August she returned to her house in town, not in any respect amended in her general health, and she suffered more from her local complaints.

"In a few days after her arrival in town, the pain being much increased, she went into the warm bath, and on the following day she was suddenly relieved by discharging a very large quantity of purulent matter, mixed with her urine. This was considered as a proof that an abscess had been formed, and discharged into the bladder, probably by means of an adhesion which had taken place, and a subsequent communication between this and the part first affected.

"She continued to go into the warm bath for a few days; but suspecting that she was weakened, and feeling herself very much fatigued by it, she relinquished it altogether. At this time her medicines were changed for some of the milder turpentines, in small doses; and still suffering considerable pain, opiates were given, and repeated as the case required.

"When there was the greatest quantity of purulent matter discharged wi h the urine, and sometimes I think there could not have been less than four ounces at a single evacuation, she suffered the least pain; but when there was a suspension of the discharge. the pain was always most severe.

"In the beginning of September, a swelling of a considerable size, with an evident fluctuation in it, was discovered on the inside of the thigh, without any appearance of inflammation or redness of the skin, as if the fluctuating matter had been formed there; and, by a careful examination, the course by which the fluid had descended from the groin to the thigh could be readily traced. The swelling gradually descended till it came very near the ham, varying in size, according to the position of the limb and body, and the patient thought she could distinctly perceive both the descent and rise of the fluid.

"The night-sweats, and other hectic symptoms, were now extreme; but, after a trial of the bark, and other medicines of that class, which disagreed, she for many weeks took no medicine whatever, except small doses of opium, when the pain was violent, and some gentle laxatives when she was costive. She was allowed to drink porter at her meals, and at any other time, without restraint, when she wished for it, and always considered herself not only supported, but very much refreshed, by its use.

"In October she kept her bed altogether, unable to move, or help herself in any position, and frequently suffering much pain. I then proposed a consultation with Mr. Cline, the surgeon of the family, to consider the propriety or expediency of making an opening in the tumor in the thigh, and, by giving it an inferior vent, to prevent the matter from returning into the abdomen. Mr.

Cline did not then think it juftifiable to make an opening in the tumor, and I readily acquiefced in his opinion.

"At the latter end of this month, fhe was reduced to a ftate of extreme weaknefs, and exceedingly emaciated; but her appetite, which had never entirely left her, now began to improve. The tumor in the thigh daily leffened, and foon difappeared altogether; as did the quantity of matter difcharged with the urine, till that alfo entirely ceafed. In November fhe frequently voided fmall quantities of blood with her ftools, and at the latter end of that month her health and ftrength were confiderably improved. There was alfo, about this time, a return of fome power of moving her limb; fhe foon became able to walk with crutches, the infirm leg being fupported in a ftirrup; and fhe had a return of the menfes, which had not before appeared fince the time of her delivery.

"On the 20th of December fhe was lifted into the coach, for the benefit of taking the air; and her health might at this time be faid to be reftored, as fhe had no complaint, and, though weak and emaciated, was every day fenfible of amendment.

"In the beginning of the year fhe again proved with child, and went on to the full period of pregnancy, when fhe was fafely delivered of a healthy boy; having recovered, before the time of her delivery, the perfect ufe of her limb. She now walks, and performs all the offices of life, with her accuftomed eafe, and has not the leaft remaining token of the complaint from which fhe had fo feverely fuffered."

CHAP. VI. Of the DROPSY and other AFFECTIONS of the OVARIA.

In the number of thofe difeafes which the fkill of the phyfician or the hand of the furgeon is not able to cure, may be counted thofe dropfies peculiar to females which originate in the appendages of the uterus. Thefe dropfies are not unfrequent. They may be divided into thofe in which the cyfts are fingle, or in which they are more in number, accompanied with hydatids more or lefs in quantity, and thofe where the parts are enlarged fo as to be an infeparable mafs of tumors.

Of female dropfies, cafes may be concluded to be proper for the operation to be propofed, if no very confiderable tumor or induration be found after the firft tapping, on examining the abdomen.

In order to favour the cure, it is to be wifhed that the firft operation be performed before the enlargement is to a great degree. It is defirable alfo that the fecond tapping, accompanied with the operation of dividing the cyft, fhould be performed in a ftate of moderate diftenfion, in order that the fac in a collapfed ftate, which the operation will reduce it to, may be lefs inconvenient in proportion to its fize.

In the Medical and Phyſical Journal, we have the following account of the cure of the ovarian dropſy, where the cyſt is ſingle, by means of inciſion in the cyſt; thereby procuring a ſimilarly favourable event in all ſuch caſes, to that which an accidental rupture of the cyſt ſometimes produces, communicated by Mr. Bernard, of Southampton.

The operation propoſed, is, to make uſe of the common trocar with a canula adapted to it (ſee pl. XII. fig. 41), in which canula there is to be a ſlit or groove, as in fig. *a*. Immediately after puncturing with the common trocar it is to be withdrawn, and before the exit of any conſiderable portion of the fluid a blunt trocar is to be introduced, fig. *b*, in which alſo is a ſlit or groove correſponding with that in the canula. In this groove is placed a biſtourie cachée, fig. *c*, turning on its centre, in order to depreſs or elevate a lancet point through the opening in the canula to the height of one twelfth of an inch or thereabout from the ſurface of the canula. The lancet point being depreſſed in the groove for introduction, the operator changes the poſition of the inſtrument thus introduced through the abdominal coverings and ſac from their courſe or direction, at firſt to a poſition which ſhall make the handle of the inſtrument lie in contact with the ſkin, and ſo that the groove or ſlit ſhall be in a line with the ſurface of the abdominal coverings, ſo that an immediate contact with the groove in the canula is the ſac interpoſed betwixt it and the abdominal coverings, which by the hand of an aſſiſtant are to be preſſed ſo as to fix more firmly the groove in contact with the ſac. The lancet point being elevated by the thumb of the operator (by which it can be raiſed or depreſſed), the blunt trocar containing the lancet is to be withdrawn, to make in its courſe an inciſion of the length of the ſlit, about two inches in the cyſt. The lancet point, when it has gone the length of the ſlit, muſt be again depreſſed to be withdrawn.

"The operator," ſays Mr. Barnard, "may, after this, permit the flow of more or leſs of the fluid as he judges proper. I ſhould think a portion of it may as well be detained.

"With reſpect to the ſucceſs of the operation, my idea is, that the lips of this inciſion can never again come in contact with each other, ſo as to unite and detain the ſecreted fluid, which being therefore admitted into the cavity in which the cyſt is contained, will be taken up by its abſorbents, and the patient be exempted from immenſe accumulation, or repeated tappings, from either of which death follows in a few years.

"I have completed, in my own mind, for a long time, and provided myſelf with, the inſtrument above deſcribed, being ſatisfied that it is a preferable method to any hitherto propoſed, whether by injecting a fluid into the cavity or introducing a ſeton."

In the ſame work we find the following deſcription of a remarkable enlargement of the ovaria; communicated by Dr. H. Vanden Boſch, of Wageningen.

CASE I.—" In the month of July, 1797," says the author, " I was desired to attend D. Jansen, a poor woman, who was supposed to be dropsical. She appeared extremely emaciated. Her abdomen was amazingly large, hanging down to her knees, and measuring rather more than four feet eight inches in circumference. She complained of great weight and pain in the lower part of the abdomen and backwards just over the right hip. Upon enquiring into her history, that I might ascertain the cause of this singular appearance, I learned that about five years ago, while she was with her husband, who was a soldier in garrison, she perceived a tightness in the lower belly, and a hardness which gradually increased; so that, upon removing to town, she consulted some females, who pronounced her to be with child; the midwife not only confirmed their opinions, but assured her that she would have twins. But these assurances proved fallacious.

" In the severe winter 1794-1795, she was compelled to remove to Weesop, where she was seized with a violent fever, which was accompanied with an alarming hemorrhagia uteri; but upon her recovery, the abdomen began to enlarge very considerably. Her anxiety increasing, she consulted the faculty at every place where she came; but with no success. Nor had the paracentesis abdominis, performed in the year 1796, by the surgeon-major of the regiment, any better effect than the medicines she had used. Not more than two cupfuls of a gelatinous fluid were discharged from two openings that were made.

" Notwithstanding the greatness of the distension, the uterus was not enlarged. She was seldom feverish; nor, when she sat still and composed, was respiration difficult. Motion became gradually more troublesome to her, till at last it was impracticable. She had her monthly courses regularly; there were seldom indications of a fluor albus: the urine was often discharged with considerable pain, and it had a lateritious sediment. In short, all the natural functions were much less impeded, even to the day of her death, than might have been expected.

" All the above symptoms, united with the ill success of the paracentesis, induced me to suspect that the distension proceeded from a tumor, degeneration, or dropsy in the ovarium; and, accordingly, I had recourse to palliative medicines. The distension increasing, I wished her to submit to a second operation, under the idea that extreme pressure might occasion a kind of symptomatic dropsy; but as I could not promise success, she refused to comply.

" A self-sufficient surgeon in the town, who assured her of a cure, and abused me for trifling with a complaint that was so easily remedied, obtained her consent. He undertook the operation in January, 1798, and after three openings could not draw off more than about a quart of fluid; he tried various medicines, but in vain. Of consequence she lost her confidence in him, and my

aſſiſtance, was again requeſted. I did my utmoſt to alleviate her miſery, till the month of July, 1800, when ſhe expired.

"I was prevented, by ſevere indiſpoſition, from opening the body; but, foreſeeing the event, I had deſired my friend Mr. F. H. Hartog, a medical pupil in the univerſity at Utrecht, to perform the operation, and communicate to me whatever appeared worthy of notice. My friend performed this office with ſkill and attention, and tranſmitted to me the following important diſcoveries, which fully juſtified my conjectures. I ſhall relate the particulars in his own words, premiſing only that the envelope of the abdomen, which had long been ſupported by a ſuſpenſorium, meaſured in the month of July, 1800, ſomewhat more than two ells and a half in length.

'Upon placing the body on the table, the abdomen appeared of an enormous ſize. It was about five feet and a half in circumference. It was hard to the touch; and various lumps or knobs were eaſily diſtinguiſhable. The navel was of the ſize of a fiſt. On the right ſide, the belly was more protuberant than on the other. Upon making an inciſion through the ſkin, we obſerved that the cellular membrane between the cutis and the muſcular parts on the left ſide was very thick, and ſeemed a kind of ſaponaceous ſubſtance; but on the right ſide there were ſcarcely any traces of this membrane. The muſcles on the left ſide were of the natural ſize; on the other they were thin and emaciated. Upon opening the cavity, about ſixteen pints of ſlimy and offenſive matter iſſued out from the parts juſt above the umbilical region.

'The inteſtines were moſtly in the upper part of the abdomen. A large, irregular, and preternatural ſubſtance occupied almoſt the whole of the remainder. This was taken out, being ſeparated from its union with the vagina, uterus, &c. that we might more minutely examine the ſtate of the body as well as the ſubſtance itſelf. The liver was in a natural ſtate. The bile in the gall bladder was thicker and of a deeper colour than is uſual. The ſpleen, pancreas, and kidneys, retained their form and conſiſtency; the ureters were, at their origin, more expanded than is natural. The ſmaller inteſtines were not injured; the larger, particularly the colon tranſverſum, were diſtended with fæces and air: the larger veſſels were as uſual. The lungs were remarkably red, but appeared in a ſound ſtate; as alſo the heart, though it was replete with blood, which poured in large quantities into the cavity of the thorax, when it was opened.

'The misformed ſubſtance had a red fleſhy appearance; it was covered with a very thin membrane. On the right ſide it was prominent, and was ſomewhat excavated on the left. It ſeemed to be compoſed of ſeveral pieces of a ſub-globular form, which were ſeparated from each other by fiſſures or grooves, from four to five inches in depth, but adhering to each other at their baſis. They reſembled the gyræ obſervable in the cortical ſubſtance of the brain. This ſubſtance was eighteen inches in length, and about nineteen

inches in diameter. In the middle of this body, rather towards the right side, was a saculum, formed of a thick membrane. This cavity measured seven inches from beneath upwards, and five in depth; but it had no communications. It contained nearly five pints of mucilaginous matter. It was surrounded by the subglobular bodies mentioned above, which, upon mature examination, seemed to consist of a hard fleshy substance; and in some places a substance resembling the materia adiposa was perceived. One thing observable in this sac was, that its internal surface was not smooth and even, but had various irregular filaments running across it, in different directions. Towards the lower part of the cavity, but nearest to the upper surface of the body, three small cavities were observable; these contained a much thicker fluid than the other part. The ureters ran in grooves behind this substance; their opening into the vesica urinaria was natural. This viscus, being strongly attached to the inferior part of the substance, was much compressed, contained very little urine, but several red particles, with which the urethra was also filled.

'The uterus was more oblong than usual, and inclined towards the left side, as did also the vagina; but they appeared in a sound state.

'The right Fallopian tube was open from its origin to the distance of about three lines from the uterus, where it became obstructed, and strongly adhered to the preternatural substance. Every trace of it was now lost, nor could a natural ovarium be perceived. The left Fallopian tube was perfect, and open through its whole length; the fimbriæ also were easily distinguished. This tube, however, was firmly attached to the cartilaginous part of the large body. This cartilaginous mass was also composed of several large knobs; and some of them were about four times the size of my fist. They adhered so firmly at their basis, that they were separated with difficulty. No ovarium could be discovered on this side.

'The weight of this great misshapen body was not less than one hundred and two pounds. As there was no appearance of ovaria, either on the right or left side, and as the tubes on each side were incorporated with this substance, I do not hesitate to pronounce that this was a *degeneratio ovariorum*; and that the ovaria adhering and growing together, formed themselves into this enormous mass.'

Case II.—The following case of a lady was given to Dr. Denman, by Mr. Thomas, surgeon, of Tunbridge Wells, who had attended her from the commencement of her illness. It is published in the Medical and Physical Journal.

This lady, who had had several children, was brought to bed in January, 1798; and had perfectly recovered her health. She menstruated regularly till the following June, when she became

ſenſible of a pain in the right ſide of the abdomen, near the groin, which, though not violent, prevented her from lying with eaſe, or ſleeping on that ſide. About the middle of January, 1799, ſhe was ſuddenly ſeized with a violent pain in her bowels, tenſion of the abdomen, and much ſoreneſs on preſſure, accompanied with vomiting, conſtipation, and frequent faintings. Theſe complaints were relieved chiefly by clyſters and gentle purgative medicines, but not entirely removed without many repetitions of them. Before this attack, ſhe had been much weakened by profuſe diſcharges of blood from the uterus, and about ten days after ſhe ſuffered very violent pain in the loweſt part of the back, ſeemingly near the extremity of the ſacrum, which joins the os coccygis, extending to the loins and acroſs to the hips, eſpecially the right, and down that thigh. The ſlighteſt preſſure on the ſacrum, or hip, brought on excruciating pain in all the neighbouring parts, which continued for ſeveral minutes after the preſſure was removed. This pain was conſidered as the ſciatica, and it was relieved by the warm bath, and the occaſional uſe of opiates. By a return of uterine hemorrhage every ſix or eight days, together with loſs of appetite and want of reſt, ſhe became extremely weak, irritable, and emaciated. On every return of uterine hemorrhage the pains in the back were much increaſed, as they alſo were by the evacuation of a coſtive ſtool, for which reaſon clyſters were daily injected. She never had much difficulty in voiding her urine, but frequent inclination to do it; yet there never was in it any diſtempered appearance.

About the middle of February, ſhe could bear to be turned from her back to her ſide; but at thoſe times ſhe felt as if ſome heavy ſubſtance was contained in the abdomen, which ſhifted its place as ſhe was turned. After a confinement of ſix weeks to her bed, the painful ſymptoms were mitigated, ſhe was able to ſit in a chair, with her feet raiſed high and her knees drawn up; but ſhe was ſoon obliged, by the pain in her back, to return to a recumbent poſition; nor was ſhe able to ſuffer her right leg to approach the ground or bear the leaſt weight upon it.

Her health and ſtrength, however, gradually improved, and in March ſhe was able to move and walk a little; but, inſtead of her former complaints, there was great tenſion and pain above the os pubis, and the whole hypogaſtric region was full and hard, but not ſore to the touch, except on the right ſide, where the hardneſs was firſt perceived. One day about this time, while ſhe was in the warm-bath, ſhe diſcovered a large and hard tumor, extending to the right ſide of the navel, the increaſe of which was ſo rapid, that in the courſe of a few days it occupied the whole abdomen. She was then freed from pain in all the parts contained in the pelvis, could turn herſelf in bed, and lie on either ſide, and not only move her legs, but walk much better. She

frequently after this had slight shivering fits, and a sense of coldness down her back, followed by restlessness and feverish heat, especially in her hands and feet in the evening, which went off with a free perspiration towards morning. Her pulse was at all times very quick.

Though one or more stools had been regularly procured every day, an immense quantity of hardened fæces, of a large volume, were now discharged for three or four successive days, by which her size was much lessened. She was soon after able to bear a journey to London, her friends being solicitous that the nature of her complaint should be ascertained, as there had been various opinions and representations made of it, by different gentlemen who had seen her in the country.

" On Sunday, March 31st," says Dr. Denman, " I visited this lady, and, as it seemed of principal importance to discover, in the first place, the seat and nature of her disease, it was necessary to be particular in my enquiries and examination. The whole abdomen was distended by a circumscribed tumor, evidently connected with, and springing from, the right side, near the groin; thence extending across, and high up in the abdomen. This tumor, though not perfectly uniform over its surface, was distinctly circumscribed, and I thought I could perceive an obscure fluctuation in it. I could also feel an angle of the tumor in the posterior part of the pelvis, by which the os uteri was projected so high and so forwards, as to be almost beyond my reach; as is the case in a retroversion of the uterus. I could also ascertain that she was not pregnant. I did not therefore hesitate to give my opinion, that it was a dropsy of the ovarium; and by supposing this, early in the disease, to have dropped low down into the pelvis, and afterwards to have risen according to its increase, all the symptoms which had occurred in the course of the disease could be satisfactorily explained.

" Having represented my opinion to the patient and her friends, though I could give but little hope of the disease being cured, I freed them from the fear and solicitude of any immediate danger.

" The following draught was the only medicine I advised:

(No. 18.) ℞ Flor. chamæmel. pulv. gr. xv.
Rad. rhei pulv. gr. v.
—— zingiber. pulv. gr. iij.
Aq. ment. sativ. unc. ij. m. f. Haustus.
Sumat ter quotidie.

" On the following day she informed me, that, after suffering considerable pain in the bowels, she had had four or five copious motions, and that after every motion she was sensible of her size decreasing. The motions were unusually offensive, and, before they came away, the desire to expel them was unnaturally urgent

and painful. On examination of them, I found that they almost wholly consisted of a gelatinous fluid, with many streaks of blood, and with little or no mixture of fæces.

"The same medicines were repeated.

"On Tuesday, after several other motions of the same kind, the distension of the abdomen was lessened more than one half, and, instead of feeling weakened by the evacuations, the patient felt herself very much relieved, and cheered with the prospect of a speedy recovery. She took a sufficient quantity of nourishment, and continued the same medicine.

"On Wednesday, I had nearly the same account of the number of motions, and of the gradual decrease of the swelling of the abdomen, which was now, in fact, wholly gone, except that I could feel the small tumor formed by the cyst, in which the fluid had been contained.

"On examining this day *per vaginam*, the os uteri was found to be descended into its proper situation, and no tumor whatever remained in the cavity of the pelvis. The patient, in short, felt and considered herself as well, in which sentiment I encouraged her; concluding in my own mind, that, in consequence of preceding inflammation, an adhesion had taken place between the cyst of the tumor and some part of the intestine, probably the rectum, the adhering portion of the bowel had given way, and, by that opening, the contents of the tumor had been evacuated.

"At my request this patient staid in town for a month, at the end of which time I saw and examined her again; but I should not then, either from the state of her health, or any thing I could discover, have suspected her ever to have suffered from any such complaint as that I have been describing."

Case III.—"The following case of an extraordinary enlargement of the abdomen, owing to a fleshy encysted tumor, was communicated by Dr. Pultney to the Medical Society of London.

"Mrs. M. was sprung from parents who both died dropsical; and she had a dropsical tendency in her constitution for several years before the disease seemed to originate, which proved fatal to her. She was married about the age of twenty-six, but had not borne children. She had been subject to hysterical affections, but had in general been remarkably regular in the natural evacuations of the sex; and continued so to nearly the last period of her life.

For more than three years before her death, this lady began to be subject to pains of a very excruciating nature, on the left side of the belly, which often attacked her, and sometimes brought on violent spasms and hysterical fits, which not unfrequently held her for several hours. The violence and frequency of these fits, by degrees, abated; but all the symptoms of a dropsy advanced very fast, and a weight and tumor, which for some time had been perceived on the left side, became more manifest. It was ima-

gined that water fluctuated in the abdomen; and, though this might probably be the case in the earlier stage of the disease, yet the seat of the pain, and the circumscribed nature of the tumor from the first, strengthened the suspicion of an enlarged ovary, and announced an unfavourable prognostic very early. The swelling gradually enlarged, and in the space of a year the whole abdomen became hard, while the tumefaction of the cellular membrane in general subsided; and the body and limbs (except the ankles, which had ever been subject to swell) became gradually emaciated, and, finally, to an extraordinary degree.

"During the greater part of the years 1785 and 1786, notwithstanding the vast bulk of the body, she was able to take the air in a carriage, and almost daily to walk a little way; and her general health was considerably better than in the early state of the disease. Towards the latter end of 1786, however, the legs swelled enormously, broke, and discharged; but without any signal benefit, or diminution of size in the body. For near a month before her death, the mouth and fauces, as has been observed in similar cases, became highly aphthous; and this affection gradually increasing, she sunk under her accumulated calamities, and died January the 30th, 1787, in the 45th year of her age."

The following were the appearances on opening the body:

"Upon puncturing the abdomen with the trocar, a small quantity of a glairy light-brown coloured liquor issued forth. After the integuments were laid aside, there appeared an immense tumor, occupying the whole cavity of the abdomen, and which, from its bulk, had in an extraordinary degree deranged the situation of the viscera; all of which, though they appeared not to be in a diseased state, were, from the total loss of fat, apparently much reduced from the natural size. The pressure upon them had been so great, that it afforded matter of curious speculation how the economy of life had been carried on so long, under so great an oppression and derangement.

"The tumor itself was nearly round, and did not adhere to the parietes of the abdomen, unless here and there by slight fibrous connections; but at its origin in the pelvis, it was firmly connected with, or seemed rather to proceed from, one of the broad ligaments; and no trace of the ovary could be distinguished. The uterus was stretched, and spread in an elongated manner on one side of the tumor.

"This large body was of a fleshy nature; and in some parts of a scirrhous-like, and almost tendinous, hardness. It was made up of a congeries of smaller tumors, from the size of a nutmeg to that of an egg; and many were much larger. These were closely compacted, and intimately united to each other: each, however, being a separate cell, or cyst, with an extremely thick fleshy coat, containing in its cavity a small quantity of the glairy

fluid before mentioned. In some instances these cysts seemed to communicate with each other, in others not so; the whole suggesting the idea that they had originally been hydatids, the coats of which had been gradually thickened, and the whole become an organised mass of flesh. The pressure, as it should seem, of the tumor on the ilia, had rendered both of them carious and purulent; and especially that on the affected side. This mass was taken entirely out of the body, and weighed fifty-six pounds, exclusive of the fluid lost in the dissection, which might probably amount to three or four pints.

" The first symptoms of a diseased or dropsical ovary, are allowedly very obscure and equivocal. Probably in most cases the part is so far enlarged, as to be sensible, even by its weight, to the patient, before the disease is discovered. In the advanced state, it is well known to admit of great variety, in respect to the change that the ovary has undergone, as well as in the nature of the contents. In some, the whole forms one large bag, or cyst, full of water, of different degrees of fluidity, as in the ascites; in others it is made up of a congeries of cysts, with coats more or less thick, and the contained fluid is sometimes glutinous and ropy, and sometimes of a steatomatous nature; in others, the whole is made up of hydatids: of this latter kind, probably, were the cysts described in the present case in the beginning of the disease; for that the tumor originated in the ovary I think we can scarcely doubt, from the strong connection it had with the broad ligament only, and the impossibility of discovering any ovary on that side.

" Diseases of this part are, unhappily, among those which admit of small relief from medicine. It may, indeed, too justly be doubted (if in any instances they are ascertainable in the beginning) whether the progress of them can be checked by the power of physic. In the latter periods, physicians but too frequently experience the inefficacy of their art. Palliative relief is then only to be expected. For what medicine could avail against the increase of an organised mass of flesh, which seemed at last, indeed, to be bounded only by the incapacity of the abdomen to admit of further enlargement?

" In the present case, while the tumor was not extraordinarily larger, and the cellular membrane was loaded, diuretics of various kinds were administered, upon casual diminutions of the renal secretion, with success. As the emaciated state came on, they were more disused; and gentle opening medicines procured temporary alleviation.

" It has been usual to consider and denominate all general enlargements of the abdomen as dropsies; and to this term, among people at large, is even annexed the idea of water in the cavity,

Were the prejudices of mankind fo far overcome, as to allow of more frequent diffections, the diagnoftics of the feveral kinds of dropfies and tumors of the abdomen might become, if not fixed, at leaft much more probably afcertainable; and a juft prognoftic fecured by the practitioner, not lefs advantageous to his reputation than to the general advancement of the art. Much injudicious and fruitlefs application of medicine would be prevented, and, not unfrequently, the unavailing operation of the paracentefis, by which the fate of the patient has doubtlefs been often accelerated.

" It would be tedious and unneceffary to quote a number of authors for cafes of this kind; they are frequent in the writers of pathological obfervations, and in the Sepulchreta of Bonetus and others. The Philofophical Tranfactions, and the London Medical Obfervations, contain feveral; but, above all, the Hiftoria Anatomico-Medica of Lieutaud abounds with them, under the heads Ovaria Tumentia, Ingentia, Scirrhofa, &c. Yet among all thefe I do not meet with any in which the whole tumor was fo entirely compofed of a hard flefhy fubftance, as in that of the prefent inftance; fince I think, from the beft computation I am able to make, that the whole could not contain five or fix pints of fluid.

" From this circumftance, the difeafe in its laft ftage, however connected originally with a dropfical caufe, will be found, in the fyftems of modern nofologifts, under the term phyfconia; of which genus Sauvages, Cullen, and Sagar, enumerate fourteen or fifteen fpecies; deriving the fpecific name and diftinction from the different vifcera or parts from which they originate.

" Sauvages, after quoting the cafe mentioned by Monro in the Edinburgh Medical Effays, vol. vi. produces one from Horftius, in which, though not arifing from the ovarium, the tumor was equal to that I have defcribed; fince it weighed fifty-fix pounds, and was of a ftrong, flefhy, and fcirrhous fubftance. It was connected with the ftomach; and is referred to the phyfconia omentalis.

" In Morgagni's book, De Caufis et Sedibus Morborum, the reader will meet with much fatisfactory information on this head. This author defcribes a cafe, in which the ovarium weighed twenty-four pounds. This tumor was unconnected, except with the left fide of the uterus, and was compofed of veficles of unequal magnitudes.

" I may refer alfo to an inftance in the Philofophical Tranfactions, communicated by Dr. Short, in which the right ovary was found diftended into a fac, containing a large quantity of fluid; and the left was enlarged, and formed a cyftic tumor,

which weighed twenty pounds. Lieutaud, among many others, from a variety of authors, cites a caſe from Vater, of a woman who died at the age of ſixty years, after having laboured under what was called a dropſy for the laſt ten; in whom the right ovary had increaſed to ſuch a magnitude, as to weigh upwards of one hundred pounds."

CHAP. VII. OF THE GENERAL MANAGEMENT OF WOMEN AFTER DELIVERY.

THE woman being delivered of the child and placenta, let a ſoft linen cloth, warmed, be applied to the external parts; and if ſhe complaints much of a ſmarting ſoreneſs, ſome pomatum may be ſpread upon it. The linen that was laid below her, to ſponge up the diſcharges, muſt be removed, and replaced with others that are clean, dry, and warm. Let her lie on her back, with her legs extended cloſe to each other; or upon her ſide, if ſhe thinks ſhe can lie eaſier in that poſition, until ſhe recovers from the fatigue: if ſhe is ſpent and exhauſted, let her take a little warm wine or caudle, or, according to the common cuſtom, ſome nutmeg and ſugar grated together in a ſpoon: the principal deſign of adminiſtering this powder, which among the good women is ſeldom neglected, is to ſupply the want of ſome cordial draught, when the patient is too weak to be raiſed, or ſuppoſed to be in danger of retchings from her ſtomach's being over-loaded. When ſhe hath in ſome meaſure recovered her ſtrength and ſpirits, let the cloths be removed from the parts, and others applied in their room; and, if there is a large diſcharge from the uterus, let the wet linen below her be alſo ſhifted, that ſhe may not run the riſk of catching cold.

When the patient is either weak or faintiſh, ſhe ought not to be taken out of bed, or even raiſed up to have her head and body ſhifted, until ſhe is a little recruited; otherwiſe ſhe will be in danger of repeated faintings, attended with convulſions, which ſometimes end in death. To prevent theſe bad conſequences, her ſkirt and petticoats ought to be looſened and pulled down over the legs, and replaced by another well warmed, with a broad head-band to be ſlipt in below, and brought up over her thighs and hips: a warm double cloth muſt be laid on the belly, which is to be ſurrounded by the head-band of the ſkirt pinned moderately tight over the cloth, in order to compreſs the viſcera and the relaxed parietes of the abdomen, more or leſs as the woman can eaſily bear it; by which means the uterus is kept firm in the lower part of the abdomen, and prevented from rolling from ſide to ſide when the patient is turned; but the principal

end of this compreffion is to hinder too great a quantity of blood from rufhing into the relaxed veffels of the abdominal contents, efpecially when the uterus is emptied all of a fudden by a quick delivery. The preffure being thus fuddenly removed, the head is all at once robbed of its proportion of blood, and the immediate revulfion precipitates the patient into dangerous lypothymia.

For this reafon the belly ought to be firmly compreffed by the hands of an affiftant, until the bandage is applied; or, in lieu of it, a long towel, fheet, or roller, to make a fuitable compreffion; but for this purpofe different methods are ufed in different countries, or according to the different circumftances of the patients. The head-clothes and fhift ought alfo to be changed, becaufe with fweating in time of labour they are rendered wet and difagreeable. Several other applications are neceffary, when the external or internal parts are rent or inflamed; misfortunes that fometimes happen in laborious and preternatural cafes. We fhall conclude this chapter with giving fome neceffary directions with regard to air, diet, &c.

Although we cannot remove the patient immediately after delivery into another climate, we can qualify the air fo as to keep it of a moderate and falutary temperature, by rendering it warm or cold, moift or dry, according to the circumftances of the occafion. With regard to diet, women, in time of labour, and even till the ninth day after delivery, ought to eat little folid food, and none at all during the firft five or feven: let them drink plentifully of warm diluting fluids, fuch as barley-water, gruel, chicken-water, and teas: caudles are alfo commonly ufed, compofed of water-gruel boiled up with mace and cinnamon, to which, when ftrained, is added a third or fourth part of white wine, or lefs if the patient drinks plentifully, fweetened with fugar to the tafte: this compofition is termed *white caudle*; whereas, if ale is ufed inftead of wine, it goes under the name of *brown caudle*. In fome countries, eggs are added to both kinds; but, in that cafe, the woman is not permitted to eat meat or broths till after the fifth or feventh day: in this country, however, as eggs are no part of the ingredients, the patient is indulged with weak broth fooner, and fometimes allowed to eat a little boiled chicken. But all thefe different preparations are to be prefcribed weaker or ftronger, with regard to the fpices, wine, or ale, according to the different conftitutions and fituations of different patients: for example, if fhe is low and weak, in confequence of an extraordinary difcharge of any kind, either before or after delivery, or if the weather is cold, the caudles and broths may be made the ftronger; but if fhe is of a full habit of body, and has the leaft tendency to a fever, or if the feafon is exceffively hot, thefe drinks ought to be of a very weak confiftence, or the patient re-

ſtricted to gruel, tea, barley and chicken water, and theſe varied according to the emergency of the caſe.

Her food muſt be light and eaſy of digeſtion, ſuch as panada, biſcuit, and ſago; about the fifth or ſeventh day ſhe may eat a little boiled chicken, or the lighteſt kind of young meat; but theſe laſt may be given ſooner or later according to the circumſtances of the caſe and the appetite of the patient. In the regimen as to the eating and drinking, we ſhould rather err on the abſtemious ſide than indulge the woman with meat and ſtrong fermented liquors, even if theſe laſt ſhould be moſt agreeable to her palate; for we find by experience that they are apt to increaſe or bring on fevers, and that the moſt nouriſhing and ſalutary diet is that which we have above preſcribed. Every thing that is difficult of digeſtion, or quickens the circulating fluids, muſt of neceſſity promote a fever, by which the neceſſary diſcharges are obſtructed, and the patient's life endangered.

As to the article of ſleeping and watching, the patient muſt be kept as free from noiſe as poſſible, by covering the floors and ſtairs with carpets and cloths, oiling the hinges of the doors, ſilencing the bells, tying up the knockers, and in noiſy ſtreets ſtrewing the pavement with ſtraw; if, notwithſtanding theſe precautions, ſhe is diſturbed, her ears muſt be ſtuffed with cotton, and opiates adminiſtered to procure ſleep; becauſe watching makes her reſtleſs, prevents perſpiration, and promotes a fever.

Motion and reſt are another part of the nonnaturals to which we ought to pay particular regard. By toſſing about, getting out of bed, or ſitting up too long, the perſpiration is diſcouraged and interrupted; and in this laſt attitude the uterus, not yet fully contracted, hangs down, ſtretching the ligaments, occaſioning pain, cold ſhiverings, and a fever: for the prevention of theſe bad ſymptoms, the patient muſt be kept quiet in bed till after the fourth or fifth day, and then be gently lifted up in the bed-clothes, in a lying poſture, until the bed can be adjuſted, into which ſhe muſt be immediately reconveyed, there to continue, for the moſt part, 'till the ninth day; after which period women are not ſo ſubject to fevers as immediately after delivery. Some there are who, from the nature of their conſtitutions, or other accidents, recover more ſlowly; and ſuch are to be treated with the ſame caution after as before the ninth day, as the caſe ſeems to indicate: others get up, walk about, and recover, in a much ſhorter time; but theſe may ſome time or other pay dearly for their foolhardineſs, by encouraging dangerous fevers; ſo that we ought rather to err on the ſafe ſide than run any riſk whatſoever.

What next comes under conſideration is the circumſtance of retention and excretion. We have formerly obſerved, that, in time of labour, before the head of the child is locked into the

pelvis, if the woman has not had an eafy paffage in her belly that fame day, the rectum and colon ought to be emptied by a clyfter, which will affift the labour, prevent the difagreeable excretion of the fæces before the child's head, and enable the patient to remain two or three days after, without the neceffity of going to ftool. However, fhould this precaution be neglected, and the patient very coftive after delivery, we muft beware of throwing up ftimulating clyfters, or adminiftering ftrong cathartics, left they fhould bring on too many loofe ftools, which, if they cannot be ftopt, fometimes produce fatal confequences, by obftructing the perfpiration and lochia, and exhaufting the woman, fo as that fhe will die all of a fudden; a cataftrophe which hath frequently happened from this practice. Wherefore, if it be neceffary to empty the inteftines, we ought to prefcribe nothing but emollient clyfters, or fome very gentle opener, fuch as manna, magnefia, caftor oil, or elect. fennæ. But no excretion is of more confequence to the patient's recovery than a free perfpiration; which is fo abfolutely neceffary, that unlefs fhe has a moifture continually on the furface of her body for fome days after the birth, fhe feldom recovers to advantage: her health, therefore, in a great meafure, depends upon her enjoying undifturbed repofe, and a conftant breathing fweat, which prevents a fever, by carrying off the tenfion, and affifts the equal difcharge of the lochia: and when thefe are obftructed, and a fever enfues with pain and reftleffnefs, nothing relieves the patient fo effectually as reft and moderate fweating, procured by opiates and fudorifics at the beginning of her complaints; yet thefe laft muft be more cautioufly prefcribed in exceffively hot than in cool weather.

The laft of the nonnaturals to be confidered are the paffions of the mind, which alfo require particular attention. The patient's imagination muft not be difturbed by the news of any extraordinary accident which may have happened to her family or friends; for fuch information hath been known to carry off the labour-pains entirely, after they were begun, and the woman has funk under her dejection of fpirits; and, even after delivery, thefe unfeafonable communications have produced fuch anxiety as obftructed all the neceffary excretions, and brought on a violent fever and convulfions, that ended in death.

The following cafes from Smellie may be ufeful to the young practitioner:.

Case I.—This relates to the inconveniences arifing from *heated air*.

"Some years ago," fays Dr. Smellie, "when the fummer was uncommonly hot in London, I was called to a patient in labour. There was a fire in the room, which was fo hot and fuffocating, that the woman, her attendants, and myfelf, were fcarcely able to breathe. I immediately ordered the fire to be

extinguifhed, the windows and door of the room to be fet wide open, and fome of the clothes to be taken off the bed. The ignorant nurfe had demanded a fire to warm the clothes or clouts, and put as many blankets on the bed as were ufed in cold weather. As fhe imagined warm and nourifhing things were beft, fhe had alfo mixed plenty of wine and fpicery in the caudle.

" When I examined, I found the labour pretty far advanced; but my patient was very hot, having a quick full pulfe, accompanied with a great drought.

" Being afraid of the bad confequence of thefe violent fymptoms, I immediately ordered twelves ounces of blood to be taken from her arm; and directed her to drink barley-water acidulated with juice of lemon. The fymptoms abated, and fhe was fafely delivered in about an hour after my arrival. The difcharges being in a fufficient quantity, I ordered her to be kept quiet, and to drink plentifully of barley-water without the lemon. The room being now pretty cool, the window was fhut, but the door left open.

" Next day, as the weather was ftill fcorching hot, I ordered a window towards the north to be kept open. The patient being ftill hot and dry, and the pulfe a little quick, I defired her to continue the barley-water for drink, and alfo to take between whiles fome water-gruel, and toafted bread for nourifhment. By this method the fever was abated, and fhe recovered.

" During the fame period I attended feveral patients in labour; and, the fame cautious methods being ufed, they all recovered. By way of precaution, I ordered each of them to lofe about fix or eight ounces of blood, to keep moderately cool, and take a light diet, more or lefs, according to their different conftitutions.

CASE II.—This relates to *errors in diet.*

" It is really furprifing," fays Dr. Smellie," to fee the folly of ignorant midwives and nurfes in their opinions about eating and drinking, from the excefs of which many poor women have loft their lives.

" I was called by one of the firft-rate midwives, to fee a fhopkeeper's wife whom fhe had delivered the night before. I found her pulfe quick; fhe had enjoyed little or no reft, and complained that fhe had an uneafinefs and load at her ftomach. The midwife told me fhe had eaten nothing but ' her chicken;' and that was her ufual way with all women, to fill up the emptynefs of their bowels, and keep the wind out of the ftomach. I found the patient was naturally of a delicate conftitution: I faid nothing then; but ordered her to drink frequently a little barley-water inftead of ftrong caudle, and prefcribed an emollient clyfter, and thefe had the good effect to empty and affift digeftion. I afterwards argued privately with the midwife on the fubject; and fhe was convinced, from what had happened, that the complaint pro-

ceeded from the patient's being forced to eat againſt her inclination. I told the midwife that the method might do with ſome who had a good appetite; and indeed ſome of my patients have complained of being exceſſively hungry after delivery, and theſe I have allowed to eat more or leſs of a chicken, or of other food of eaſy digeſtion, and they were not the worſe; but to thoſe who had no ſuch craving, I found gruel and broth with bread were better, and ſat eaſier on the ſtomach."

CASE III.—Fatal errors are alſo frequently committed in the article of *drink*. Many midwives imagine, that women in labour, and after delivery, ought to have ſtrong cordials to aſſiſt and ſupport them, together with brandy or wine in their caudle. Dr. Smellie gives a fatal inſtance of this, which may be ſufficient to deter midwives from ſuch practices. "Many years ago," ſays he, "I was called to a friend of my wife's, who had been ſafely delivered about three days. When I arrived, they told me ſhe had been in a great fever, and had violent pains in the abdomen, for two days; but that now ſhe was much eaſier. I enquired particularly, and found that, during labour and ever ſince, her drink had been moſtly warm punch; three parts water, and one of brandy. She had an intenſe heat on the ſkin of her arm; her pulſe was quick, low, and intermitting. The pains, from being violent, were ſuddenly abated, and indeed quite gone. I then told the friends, that, far from being better, ſhe was in the moſt imminent hazard of her life; that there had been a violent inflammation of the uterus; and that the pains abating on a ſudden plainly indicated, that an incurable mortification was come on; that as her pulſe had begun to intermit, ſhe would ſoon grow delirious, and die in a few hours. My prognoſtic was verified, to the great ſurpriſe of all preſent."

CASE IV.—This caſe relates to *ſleep and watching*. Dr. Smellie tells us, that it was formerly counted dangerous to allow women to ſleep immediately after delivery, and that it was not uncommon for the nurſe and attendants to keep them awake, by reading odd romantic ſtories. Every one knows the abſurdity of this, as well as the perfect ſafety and advantage with which opiates generally may be adminiſtered either before or after labour. Some difficulties, however, may occur in caſes where opium uſually diſagrees with the patient.

Dr. Smellie was called by an apothecary to a patient who had been delivered the day before. She had got no reſt, and complained of great pain in her bowels, which did not ſeem to be after-pains. It was her firſt child. She had no ſtoppage of urine or ſymptoms of a fever. She begged of him if poſſible to relieve her; but at the ſame time, not to give her any preparation in which there was *opium*. "I told the apothecary," ſays the doctor, "that as the pains were ſo violent, nothing elſe could re-

lieve her. He ſaid, that opiates did never agree with her in her former complaints, or make her ſleep when reſtleſs. I anſwered, that I wanted only to eaſe the pain; and after that ſhe would ſleep of courſe, and that we muſt deceive her. I ordered a draught with thirty drops of the tincture of opium. I called next morning, and found her free from pain. She had enjoyed good reſt; and ſaid, that ſhe had been in heaven ever ſince ſhe had taken the medicine. I have had many inſtances of the ſame kind, when opiates were adminiſtered properly, as mentioned in the latter end of the firſt volume. However, I have had alſo ſome few patients who were not in pain, but could not reſt, and opiates did them no ſervice; as in the following caſe.

CASE V.—"An apothecary's wife, in her firſt child, was every way ſafe and eaſy after delivery, but could not ſleep. I ordered a gentle opiate, which had no effect; but inſtead of compoſing, gave her a giddineſs, and preſented many ſpectres to her imagination. I then ordered a bolus of pulv. caſtor. gr. v. and ſal. vol. corn. cervi gr. iij. to be taken, and repeated occaſionally. This had the deſired effect, by which ſhe got good reſt; and it was the only remedy that procured ſleep in her ſucceeding deliveries."

CASE VI.—This caſe relates to *motion and reſt*.

"A woman of a healthy conſtitution," ſays Dr. Smellie, "who had been delivered twice in the country, came to live with her family in London when big with child. I was beſpoken to attend her, and ſhe was ſafely delivered. I viſited her the ſecond and third day, and found every thing in a good way; but was ſurpriſed when I called on the fourth to find her up, and in her common dreſs. She told me, that ſhe had ſat up the evening and night before, and played at cards, and was to dine with the family; that ſhe had done the ſame after her former labours, and recovered much better than thoſe who lay in bed. I exclaimed againſt that practice, and told her that I had been called often to patients who had been thrown into violent complaints by getting up too ſoon, and I was afraid ſhe might ſuffer ſooner or later by being too forward. However, ſhe perſiſted in her old way, and recovered exceedingly well; but the next time I delivered her, ſhe was on the fourth day taken with violent pains in the lower parts of the abdomen, which threw her into a violent fever. As I was engaged with another patient, I did not ſee her till they ſent for me on the ſixth, when I found the pains and fever exceſſive. She was immediately blooded; a phyſician was called, and we ordered ſaline draughts with nitre. She grew delirious, the pain went off ſuddenly on the ſeventh, and ſhe died the ſame night."

CASE VII.—In this caſe there exiſted an obſtruction of urine.

"I was called," ſays Dr. Smellie, "to a woman who had been, three hours before I came, delivered of her firſt child, about eight at night. She complained of exceſſive pain in the abdomen.

Her midwife had left her. I enquired of the patient if ſhe had made water during labour, and ſhe told me ſhe had made great quantities. I examined the abdomen, and found there was not another child, and the nurſe told me that the placenta was all come off: I ordered her an opiate, in hopes that it would relieve the pain, and called next morning, when the midwife was preſent. The patient was ſtill in great pain, and had got no reſt all night. I then ſaid I was ſurpriſed that the complaint was ſo obſtinate, eſpecially as ſhe had paſſed ſo much water in the time of labour, and enquired if ſhe had made any during the night. The midwife told me, that ſhe was certain ſhe had made no water all the time of her labour, which was very tedious, and that ſhe had paſſed none ſince. I then found that the patient had miſtaken the waters from the uterus for her urine, and that all theſe pains proceeded from the diſtenſion of the bladder. I immediately drew off a large quantity, as I remember, about five pints. She ſaid in time of the operation, when not above a pint or leſs was drawn off, that now ſhe was as if in heaven, by being free from pain. I have had many ſuch caſes, in which I was obliged to draw off the urine ſeveral times before the patients could make water; but unleſs they were in great pain, I always waited to try what nature would do, ſometimes to the third or even to the fourth day, eſpecially if they ſweated much."

Case VIII.—*Coſtiveneſs.* "It is a great happineſs," ſays Dr. Smellie, "if patients are coſtive before delivery, that the child's head as it is preſſed down to the lower part of the pelvis forces down before it the hard excrements which are contained in the rectum; by which means the patient has a plentiful ſtool. I have had many patients, however, who wanted relief about the fourth or fifth day after; this was eaſily accompliſhed by laxative medicines or clyſters.

"I was called to a woman who had been without paſſage from her delivery to the ſeventh day. She had great ſtrainings, but to no purpoſe. A clyſter was tried to be thrown up, but it would not paſs. A ſuppoſitory was uſed, without producing the deſired effect. About four ſpoonfuls of warmed oil were injected, which brought off ſome hard fæces: this gave room for another clyſter, which relieved the patient."

Case IX.—*Purging.* "A woman, about the eighteenth or twentieth day after delivery, when ſhe ſeemed out of danger, was taken all of a ſudden with a violent purging, which immediately ſunk her very low: this was ſoon checked; but then her legs began to ſwell, from her having been ſo ſuddenly emptied and weakened by the looſeneſs. Her ſtomach alſo nauſeated all food. Being called to her aſſiſtance, I declared her in great danger, eſpecially as ſhe was naturally of a weak conſtitution, and I adviſed the friends to take the advice of a phyſician, as it was not

now my province to prescribe. Dr. Mead visited her next day, and ordered medicines to invigorate the body, by quickening the circulation of the blood, and strengthening the fibres of the bowels; nevertheless the languor continued, and the swelling in her legs increased with violent pains in them. At last, the lower part of her belly and right side swelled excessively, and she died about six weeks after delivery."

CASE X.—*Passions of the mind.* "I attended a patient on the night that a fire happened in Beaufort-buildings, and within a few houses of the patient's dwelling. The labour went on exceedingly well, and we kept her from the knowledge of the accident for some little time, until we had taken measures for her safety, by having a chair in waiting, and a room prepared in a friend's house near Covent-garden. At length the noise alarmed her; I told her the affair, and that it was at a distance, and also that we had provided for her safety: she seemed satisfied; yet the pains immediately ceased. And although the fire was extinguished, yet the pains did not return till some hours after, when she was soon delivered, and recovered tolerably well."

CASE XI.—"I was called to Fenchurch-street by one of my pupils, who with an old midwife was attending a patient pretty much advanced in years, in labour of her first child. Every thing was in a right way for a safe delivery; but as the case was tedious and lingering, both the woman and her friends were impatient, and had sent for an old blundering pretender in that neighbourhood, who told the patient that she was in the utmost danger if she was not immediately delivered. He said he hoped he could save her life, but the child was dead already, and he called in another midwife, who confirmed what he asserted. The woman's pains had been vigorous; but these dismal proposals frightened her so much, that when I arrived they were quite gone off. After conversing with the patient, we (all five) went to another room, where the parties began to quarrel. I called the old blustering practitioner aside, and told him my opinion, that the woman was in no danger; but by time and patience I hoped would be safely delivered. As I threatened to have him called before the college if he insisted on any violent operation, he quitted the house with his associate, after which we had time to soothe and encourage the woman. As she had got little sleep, we gave her a draught with thirty drops of laudanum, and the midwife delivered her safely on the next day."

CHAP. VIII. Of VIOLENT FLOODINGS.

All women, when the placenta feparates, and after it is delivered, lofe more or lefs red blood, from the quantity of half a pound to that of a pound, or even two; but fhould it exceed this proportion, and continue to flow without diminution, the patient is in great danger of her life: this hazardous hemorrhagy is known by the violence of the difcharge, wetting frefh cloths as faft as they can be applied; from the pulfe becoming low and weak, and the countenance turning pale; then the extremities grow cold, fhe finks into faintings, and, if the difcharge is not fpeedily ftopped or diminifhed, is feized with convulfions, which often terminate in death.

This dangerous efflux is occafioned by every thing that hinders the emptied uterus from contracting, fuch as great weaknefs and laffitude, in confequence of repeated floodings before delivery; the fudden evacuation of the uterus; fometimes, though feldom, it proceeds from part of the placenta's being left in the womb; it may happen when there is another child, or more, ftill undelivered; when the womb is kept diftended with a large quantity of coagulated blood; or when it is inverted, by pulling too forcibly at the placenta.

In this cafe, as there is no time to be loft, and internal medicines cannot act fo fuddenly as to anfwer the purpofe, we muft have immediate recourfe to external application. If the diforder be owing to weaknefs, by which the uterus is difabled from contracting itfelf, fo that the mouths of the veffels are left open; or, though contracted a little, yet not enough to reftrain the hemorrhagy of the thin blood; or if, in feparating the placenta, the accoucheur has fcratched or torn the inner furface or membrane of the womb; in thefe cafes, fuch things muft be ufed as will affift the contractile power of the uterus, and hinder the blood from flowing fo faft into it and the neighbouring veffels; for this purpofe, cloths dipped in any cold aftringent fluid, fuch as oxycrate, or red tart wine, may be applied to the back and belly. Some prefcribe venæfection in the arm, to the amount of fix or eight ounces, with a view of making revulfion: if the pulfe is ftrong, this may be proper; otherwife, it will do more harm than good. Others order ligatures, for compreffing the returning veins at the hams, arms, and neck, to retain as much blood as poffible in the extremities and head. Befides thefe applications, the vagina may be filled with tow or linen rags, dipped in the above-mentioned liquids, in which a little alum or vitriolated zinc hath been diffolved; nay, fome practitioners inject proof fpirits warmed, or, foaking them up in a rag or fponge, introduce and fqueeze them

into the uterus, in order to conftringe the veffels; but we doubt the propriety of this.

If the flooding proceeds from another child, the retention of the placenta (fee chap. vi.), or coagulated blood, thefe ought immediately to be extracted; and if there is an inverfion of the uterus, it muft be fpeedily reduced. Should the hemorrhagy, by thefe methods, abate a little, but ftill continue to flow, though not in fuch a quantity as to bring on fudden death, fome red wine and jelly ought to be prefcribed for the patient, who fhould take it frequently, and a little at a time; but, above all things, chicken or mutton broths, adminiftered in the fame manner, for fear of overloading the weakened ftomach, and occafioning retchings; thefe, repeated in fmall quantities, will gradually fill the exhaufted veffels, and keep up the circulation. If the pulfe continues ftrong, it will be proper to order repeated draughts of barley-water, acidulated with diluted acid of vitriol; but if the circulation be weak and languid, extract of bark, diffolved in aq. cinnamomi, and given in fmall draughts, or exhibited in any other form, will be ferviceable; at the fame time lulling the patient to reft with opiates. Thefe, indeed, when the firft violence of the flood is abated, if properly and cautioufly ufed, are generally more effectual than any other medicine.

Case I.—Dr. Smellie attended a woman in a tedious labour, who was at laft fafely delivered. A large difcharge of blood followed the placenta, which did not abate as ufual, but continued fo as to fink her fpirits, and endanger the patient's life. Her countenance turned pale, and her pulfe became low. "I immediately," fays the doctor, "gave her fifteen drops of laudanum, and applied cloths dipped in vinegar to the pudenda. The difcharge diminifhed; but continued to flow rather fafter than I judged was fafe in her weak condition. I gave five drops more in about half an hour after the firft, which had the defired effect, by throwing her into fleep, and reftraining the flooding. She recovered tolerably well; but was weak for fome time before fhe retrieved her wonted ftrength. The next time fhe happened to be in labour fhe was exceffively afraid of being again in the fame condition, and begged I would order the fame medicine by way of prevention. When I found the labour was pretty far advanced, and the os uteri dilated by the membranes, I gave her twenty drops of laudanum, and before the delivery fhe began to dofe a little betwixt the pains. She was foon delivered, and had a moderate difcharge, which gradually abated. She afterwards fell into a found fleep, and recovered very well. I have had many fuch cafes, in which I always found this method the moft fuccefsful when called in time, and when the veffels were not too much emptied."

Case II.—"A woman, whom I had fafely delivered after a

tedious labour, ſeemed to be in a good way, but of a weakly conſtitution. I was called in a hurry to another patient; but before I left her, the uterine diſcharge was ſufficiently abated. I ordered a quieting draught to be taken, if ſhe did not ſoon fall aſleep. In about an hour after they ſent for me: when I arrived I found the patient quite pale, with ſcarcely any pulſe; ſhe had fainted ſeveral times. I was told by the nurſe, that when moved to place her right in bed, ſhe was taken all of a ſudden with a violent flooding, to ſuch a degree, that it ran over the bed into the floor. I immediately ordered cloths dipped in vinegar and water, wrung out, to be applied; but while I was dropping ſome tinct. opii into a cup with wine and water, the draught not being yet come from the apothecary's, ſhe fell into another fainting fit, and expired. Such fatal accidents ſeldom happen, except in extreme weakneſs of conſtitution, or from great floodings before, and in time of, delivery. I regretted that I had not given her an opiate in time of labour, which I have ſince found from experience to be the beſt method, to ſecure the patient from being attacked by ſuch fatal diſcharges."

Case III.—"I was called by another gentleman, to aſſiſt in a caſe wherein the patient was in time of labour attacked with a flooding, occaſioned by part of the placenta's being detached from the uterus. He had given her repeated aſtringent draughts with five drops of tinct. opii in each; but as they had not procured any inclination to ſleep, I adviſed him to give her a ſimple draught with thirty drops. This ſoon had the deſired effect; ſhe ſlept ſound betwixt every pain, the flooding abated, and in a little time ſhe was ſafely delivered. She had been much reduced by the flooding; was weak and low; but by her falling aſleep immediately after delivery, the diſcharge was abated, and kept within bounds."

CHAP. IX. Of the AFTER-PAINS.

After-pains commonly happen when the fibrous part of the blood is retained in the uterus or vagina, and formed into large clots, which are detained by the ſudden contraction of the os internum and externum, after the placenta is delivered; or, if theſe ſhould be extracted, others will ſometimes be formed, though not ſo large as the firſt, becauſe the cavity of the womb is continually diminiſhing after the birth. The uterus, in contracting, preſſes down theſe coagula to the os internum; which, being again gradually ſtretched, produces a degree of labour pains, owing to the irritation of its nerves: in conſequence of this uneaſineſs, the woman ſqueezes the womb as in real labour; the force being increaſed, the clots are puſhed along, and when they are delivered

ſhe grows eaſy. The larger the quantity is of the coagulated blood, the ſeverer are the pains, and the longer they continue.

Women, in the firſt child, ſeldom have after-pains; becauſe, after delivery, the womb is ſuppoſed to contract and puſh off the clots with greater force in the firſt than in the following labours: after-pains may alſo proceed from obſtructions in the veſſels, and irritations at the os internum. In order to prevent or remove theſe pains, as ſoon as the placenta is ſeparated and delivered, the hand being introduced into the uterus may clear it of all the coagula. When the womb is felt through the parieties of the abdomen larger than uſual, it may be taken for granted that there is either another child, or a large quantity of this clotted blood; and, whichſoever it may be, there is a neceſſity for its being extracted. If the placenta comes away of itſelf, and the after-pains are violent, they may be alleviated and carried off by an opiate: for, by ſleeping and ſweating plentifully, the irritation is removed, the evacuations are increaſed, the os uteri is inſenſibly relaxed, and the coagula ſlide eaſily along. When the diſcharge of the lochia is ſmall, the after-pains, if moderate, ought not to be reſtrained; becauſe the ſqueezing which they occaſion promotes the other evacuation, which is neceſſary for the recovery of the patient. After-pains may alſo proceed from an obſtruction in ſome of the veſſels, occaſioning a ſmall inflammation of the os internum and ligaments; and the ſqueezing thereby occaſioned may not only help to propel the obſtructing fluid, but alſo (if not too violent) contribute to the natural diſcharges.

CHAP. X. Of the LOCHIA.

We have already obſerved, that the delivery of the child and placenta is followed by an efflux of more or leſs blood, diſcharged from the uterus, which, by the immediate evacuation of the large veſſels, is allowed to contract itſelf the more freely, without the danger of an inflammation, which would probably happen in the contraction, if the great veſſels were not emptied at the ſame time; but as the fluids in the ſmaller veſſels cannot be ſo ſoon evacuated, or returned into the vena cava, it is neceſſary that, after the great diſcharge is abated, a ſlow and gradual evacuation ſhould continue, until the womb ſhall be contracted to near the ſame ſize which it had before pregnancy; and to this it attains about the eighteenth or twentieth day after delivery, though the period is different in different women.

When the large veſſels are emptied immediately after delivery, the diſcharge frequently ceaſes for ſeveral hours, until the fluids in the ſmaller veſſels are propelled into the larger, and then begins to flow again, of a paler colour.

The red colour of the lochia commonly continues till the fifth day, though it is always turning more and more ferous from the beginning; but, about the fifth day, it flows of a clear, or fometimes (though feldom) of a greenifh tint; for, the mouths of the veffels growing gradually narrower by the contraction of the uterus, at laft allow the ferous part only to pafs: as for the greenifh hue, it is fuppofed to proceed from a diffolution of the cellular or cribriform membrane or mucus, that furrounded the furface of the placenta and chorion; part of which, being left in the uterus, becomes livid, decays, and, diffolving, mixes with and tinctures the difcharge as it paffes along.

Though the lochia, as we have already obferved, commonly continue till the eighteenth or twentieth day, they are every day diminifhing in quantity, and fooneft ceafe in thofe women who fuckle their children, or have had an extraordinary difcharge at firft; but the colour, quantity, and duration, differ in different women: in fome patients, the red colour difappears on the firft or fecond day; and in others, though rarely, it continues more or lefs to the end of the month: the evacuation in fome is very fmall, in others exceffive: in one woman it ceafes very foon, in another flows during the whole month; yet all of thefe patients fhall do well.

Some allege, that this difcharge from the uterus is the fame with that from a wound of a large furface; but it is more reafonable to fuppofe, that the change of colour and diminution of quantity proceed from the flow contraction of the veffels; because, previous to pus, there muft have been lacerations and impofthumes, and, in women who have fuddenly died after delivery, no wound or excoriation hath appeared upon the inner furface of the womb, which is fometimes found altogether fmooth, and at other times rough and unequal, on that part to which the placenta adhered. The fpace that is occupied before the delivery, from being fix inches in diameter, or eighteen inches in circumference, will, foon after the birth, be contracted to one third or fourth of thefe dimenfions.

CASE I.—Dr. Smellie was called to a woman foon after delivery, who was in great pain at intervals, and imagined fhe had another child. "I examined," fays he, "and felt the os uteri contracted; the uterus indeed felt larger than common, when I examined the abdomen; but not fo much as to induce one to believe it contained another fœtus. The midwife and nurfe affured me, that the placenta came off without any violence. I ordered a compofing mixture with thirty drops of the tinct. opii, one half to be given prefently, and the remainder afterwards, as there might be occafion, to relieve the pains and procure reft. This was in the morning, and the weather was exceffively cold. I called again in the evening; fhe was ftill in pain, but had dofed

a little. She complained much of the coldneſs of her feet. I ordered hot bricks wrapped in flannel to be applied to the ſoles of her feet, and the ſmall of her back, which was alſo affected with a chilneſs. I alſo deſired the nurſe to put more clothes on the bed, and give her ſome warm gruel. She had taken all the mixture, and I did not chooſe to order any more, being in hopes that this method would throw her into a plentiful ſweat, which would relax the fibres, and aſſiſt her complaints; or carry off the ſpaſms that might be the occaſion of the after-pains.

"Next morning, when I viſited her, the nurſe told me, that ſoon after my directions were followed the patient fell into a pleaſant ſweat; a very large coagulum was diſcharged; the pains went off, and ſhe had a good night's reſt."

Case II.—"I attended a patient, whoſe child and placenta were delivered expeditiouſly and ſafely, with a very few labour pains: but ſoon after that ſhe was attacked by ſevere after-pains. I ordered a compoſing mixture, as in the former caſe, to procure a breathing ſweat as ſoon as poſſible. She got ſome reſt, fell into a gentle diaphoreſis, and ſome ſmall coagula were diſcharged; but after the effect of the opiate was over, the pains returned with great violence. She ſeemed to be, in every other reſpect, in a good way of recovery. As her pulſe was rather quick, I did not chooſe to repeat the opiate; but, to amuſe her, I ordered two ſpermaceti draughts, as ſhe called for them. When I repeated my viſit in the evening, the violence of the pains ſtill continued: yet, although ſhe had not ſlept, ſhe had undergone a gentle perſpiration, and her pulſe was become more moderate. I then preſcribed a ſimple draught with tinct. opii gtt. xx.; the pains abated in the night, but returned in the morning, and grew more violent in the evening. The laſt draught was again repeated, and adminiſtered the night following. The pains went entirely off on the fifth day, without any more clots of blood being diſcharged. Of theſe two caſes, the firſt ſeems to have proceeded from coagulated blood, and the laſt from periodical ſpaſms, or irritations; for the common diſcharges were in the uſual proportion. I have had many ſuch caſes; but ſeldom any ſo violent."

Chap. XI. Of the MILK-FEVER.

About the fourth day, the breaſts generally begin to grow turgid and painful. We have formerly obſerved, that, during the time of uterine geſtation, the breaſts in moſt women gradually increaſe till the delivery, growing ſofter as they are enlarged by the veſſels being more and more filled with fluids; and by this gradual diſtenſion they are prepared for ſecreting the milk from the blood after delivery. During the two or three firſt days after parturition,

especially when the woman has undergone a large discharge, the breasts have been sometimes observed to subside and grow flaccid; and about the third or fourth day, when the lochia begin to decrease, the breasts swell again to their former size, and stretch more and more, until the milk, being secreted, is either sucked by the child, or frequently of itself runs out at the nipples.

Most of the complaints incident to women after delivery proceed either from the obstruction of the lochia in the uterus, or of the milk in the breasts, occasioned by any thing that will produce a fever; such as catching cold, long and severe labour, eating food that is hard of digestion, and drinking fluids that quicken the circulation of the blood in the large vessels; by which means the smaller, with all the secretory and excretory ducts, are obstructed.

The discharge of the lochia being so different in women of different constitutions, and besides in some measure depending upon the method of management, and the way of life peculiar to the patient, we are not to judge of her situation from the colour, quantity, and duration of them, but from the other symptoms that attend the discharge; and if the woman seems hearty, and in a fair way of recovery, nothing ought to be done with a view to augment or diminish the evacuation. If the discharge be greater than she can bear, it will be attended with all the symptoms of inanition; but as the lochia seldom flow so violently as to destroy the patient of a sudden, she may be supported by a proper nourishing diet, assisted with cordial and restorative medicines. Let her, for example, use broths, jellies, and asses' milk; if the pulse is languid and sunk, she may take moderate doses of the confect. aromat. with mixtures composed of the cordial waters and volatile spirits: subastringents and opiates frequently administered, with the cinchona in different forms, and austere wines, are of great service. On the other hand, when the discharge is too small, or hath ceased altogether, the symptoms are more dangerous, and require the contrary method of cure: for now the business is to remove a too great plenitude of the vessels in and about the uterus, occasioning tension, pain, and labour in the circulating fluids; from whence proceed great heat in the part, restlessness, fever, a full, hard, quick pulse, pains in the head and back, nausea, and difficulty in breathing. These complaints, if not at first prevented, or removed by rest and plentiful sweating, must be treated with venæsection and the antiphlogistic method.

When the obstruction is recent, let the patient lie quiet, and encourage a plentiful diaphoresis, by drinking frequently of warm, weak, diluting fluids, such as water gruel, barley-water, tea, or weak chicken-broth.

Should these methods be used without success, and the patient, far from being relieved by rest, plentiful sweating, or a sufficient discharge of the obstructed lochia, labour under an hot dry skin,

anxiety, and a quick, hard, and full pulſe, the warm diaphoretics muſt be laid aſide; becauſe, if they fail of having the deſired effect, they muſt neceſſarily increaſe the fever and obſtruction, and recourſe be had to bleeding at the arm or ankle to more or leſs quantity, according to the degree of fever and obſtruction; and this evacuation muſt be repeated as there is occaſion. When the obſtruction is not total, it is ſuppoſed more proper to bleed at the ankle than at the arm; and at this laſt, when the diſcharge is altogether ſtopped, the ordinary drink ought to be impregnated with nitre.

If ſhe is coſtive, emollient and gently opening clyſters may be occaſionally injected; and her breaſts muſt be fomented with a decoction of poppy heads, and ſucked, either by the mouth or pipe-glaſſes. If by theſe means the fever is abated, and the neceſſary diſcharges return, the patient commonly recovers; but if the complaints continue, the antiphlogiſtic method muſt ſtill be purſued. If, notwithſtanding theſe efforts, the fever is not diminiſhed or removed by a plentiful diſcharge of the lochia from the uterus, the milk from the breaſts, or by a critical evacuation by ſweat, urine, or ſtool, and the woman is every now and then attacked with cold ſhiverings, an abſceſs or abſceſſes will probably be formed in the uterus or neighbouring parts, or in the breaſts; and ſometimes the matter will be tranſlated to other ſituations, and the ſeat of it foretold from the part's being affected with violent pains: theſe abſceſſes are more or leſs dangerous according to the place in which they happen, the largeneſs of the ſuppuration, and the good or bad conſtitution of the patient. (See the ſurgical treatment of the milk-breaſt, in vol. III. page 485.)

If, when the pains in the epigaſtric region is violent, and the fever increaſed to a very high degree, the patient ſhould all of a ſudden enjoy a ceſſation from pain, without any previous diſcharge or critical eruption, the phyſician may pronounce that a mortification is begun; eſpecially if, at the ſame time, the pulſe becomes low, quick, wavering, and intermitting; if the woman's countenance, from being florid, turns duſky and pale, while ſhe herſelf, and all the attendants, conceive her much mended; in that caſe, ſhe will grow delirious, and die in a very ſhort time.

What we have ſaid on this ſubject regards that fever which proceeds from the obſtructed lochia, and in which the breaſts may likewiſe be affected; but the milk-fever is that in which the breaſts are originally concerned, and which may happen though the lochia continue to flow in ſufficient quantity; nevertheleſs, they mutually promote each other, and both are to be treated in the manner already explained; namely, by opiates, diluents, and diaphoretics, in the beginning; and, theſe preſcriptions failing, the obſtructions muſt be reſolved by the antiphlogiſtic method deſcribed above. The milk-fever alone, when the uterus is not concerned, is not ſo dangerous, and is much more eaſily relieved. Women of an

healthy conſtitution, who ſuckle their own children, have good nipples, and whoſe milk comes freely, are ſeldom or never ſubject to this diſorder, which is more incident to thoſe who do not give ſuck, and neglect to prevent the ſecretion in time; or, when the milk is ſecreted, take no meaſures for emptying their breaſts. This fever likewiſe happens to women who try too ſoon to ſuckle, and continue their efforts too long at one time; by which means the nipples, and conſequently the breaſts, are often inflamed, ſwelled, and obſtructed.

In order to prevent a too great turgeſcence in the veſſels of the breaſts, and the ſecretion of milk, in thoſe women who do not chooſe to ſuckle, it will be proper to make external application of thoſe things which, by their preſſure and reſtringent force, will hinder the blood from flowing in too great a quantity to this part, which is now more yielding than at any other time: for this purpoſe, let the breaſts be covered with emp. litharg. ſpread upon ſoft leather, or cloths dipped in camphorated ſpirits be frequently applied to theſe parts and the arm-pits; while the patient's diet and drink is of the lighteſt kind, and given in ſmall quantities. Notwithſtanding theſe precautions, a fullneſs commonly begins about the third day; but by reſt, moderate ſweating, and the uſe of theſe applications, the tenſion and pain will ſubſide about the fifth or ſixth day, eſpecially if the milk runs out at the nipples: but if the woman catches cold, or is of a full habit of body, and not very abſtemious, the tenſion and pain increaſing, will bring on a cold ſhivering ſucceeded by a fever; which may obſtruct the other excretions, as well as thoſe of the breaſt.

In this caſe, mild diaphoretics and nitre muſt be preſcribed, and if a plentiful ſweat enſue, the patient will be relieved; at the ſame time the milk muſt be extracted from her breaſts, by ſucking with the mouth or glaſſes. Should theſe methods fail, and the fever increaſe, ſhe ought to be blooded in the arm; and, inſtead of the external applications hitherto uſed, emollient liniments and cataplaſms muſt be ſubſtituted, in order to ſoften and relax. If, in ſpite of theſe endeavours, the fever proceeds for ſome days, the patient is frequently relieved by critical ſweats, a large diſcharge from the uterus, miliary eruptions, or looſe ſtools mixed with milk, which is curdled in the inteſtines; but ſhould none of theſe evacuations happen, and the inflammation continue with increaſing violence, there is danger of an impoſthume, which is to be brought to maturity, and managed like other inflammatory tumors; but ſtrong aſtringents ought not to be applied, leſt they produce ſcirrhous ſwellings in the glands.

As the criſis of this fever, as well as of that laſt deſcribed, often conſiſts in miliary eruptions over the whole ſurface of the body, but particularly on the neck and breaſt, by which the fever is carried off, nothing ought to be given which will either greatly increaſe or

diminiſh the circulating force, but ſuch only as will keep out the eruptions. But if, notwithſtanding theſe eruptions, the fever, inſtead of abating, is augmented, it will be neceſſary to diminiſh its force, and prevent its increaſe, by thoſe evacuations we have mentioned above. On the contrary, ſhould the pulſe ſink, the eruptions begin to retreat inwardly, and the morbific matter be in danger of falling upon the viſcera, we muſt endeavour to keep them out by opiates and ſudorific medicines; and here bliſters may be applied with ſucceſs.

Chap. XII. Of SORE NIPPLES.

We have already made ſome remarks on the treatment of this troubleſome complaint, in vol. IV. p. 232. To what has been there pointed out, we have only to add a ſhort account of a remedy propoſed by Dr. Underwood, with many aſſurances of its efficacy. This is no other than a ſolution of vitriolated iron in water, which he calls his "*aſtringent ſolution.*" He directs the vitriolated iron (how far like a *chemiſt*, we leave to others to determine) to be firſt *deprived of its water of cryſtallization*, by "calcination to whiteneſs," before the *water is added to it.* He ſays, it is "the beſt application hitherto known for that obſtinate and painful ſore on the nipples of ſuckling women, for which almoſt every thing has been tried—and almoſt in vain. The nipples need only to be touched with it ſeveral times in the day, either by the point of the finger, or a camel-hair pencil; the part being afterwards covered with the patient's hand, or other contrivance, to prevent the ſolution being wiped off; the ſtrength of which muſt be determined by the degree of tenderneſs and extent of the ſore."

"I think," adds the doctor, "I have found ſome advantage in theſe caſes, and certainly, in drawing out a bad nipple, by covering it with a large nutmeg, hollowed out, and the edges left flat. But whether the warm aromatic quality of the nut has contributed to this, or it has ariſen merely from defending the tender nipple both from the linen, which becomes rough by the milk drying upon it, and from the common air, I am not at all anxious to determine. Such a contrivance is always at hand, and attended with no trouble, though worn pretty conſtantly, and I therefore often adviſe the uſe of it as ſoon as the nipples begin to get ſore. This is likewiſe, doubtleſs, the beſt time to have recourſe to the *ſolution*, which has hitherto anſwered exceedingly well, ever ſince I have been acquainted with it. In ſome very bad caſes, where the chaps are ſo deep that the ſolution cannot be retained on the part, and are exquiſitely tender, eſpecially if of long ſtanding, it will be uſeful to cover the part with an ointment that is not relaxing, but moderately warm and drying, as the common white cerate may be rendered by

ſimmering a little brandy in it. A caſe ſometimes occurs, in which the nipple is not ſo much chapped as it is enlarged and inflamed, and attended with an oozing of ſharp ſerum. Here, after waſhing the part with the ſolution made very weak, ſprinkling it with a little finely powdered gum tragacanth is of very ſingular ſervice. But in other inſtances, my chief dependence is upon the ſolution, which, if properly attended to, will remove the complaint." As to the proportion of calcined vitriolated iron to be uſed, the doctor tells us that "the tongue will be the beſt ordinary teſt of its due ſtrength, which muſt always be varied according to the degree of pain and other effects; always beginning with it ſufficiently weak. On theſe accounts, it can be no wonder if it ſhould do leſs good when left in the hands of nurſes, or uſed merely at the diſcretion of patients, ſome of whom do not make uſe of it frequently enough; whilſt others are inclined, as improperly, to keep it conſtantly on the part, or make it too ſtrong. But in the hands of phyſicians or ſurgeons, who know what effects it is deſigned to produce, and will regulate it accordingly, it cannot fail to gain them credit, and give ſatisfaction, provided they will for a few days attend to it themſelves."

"One great advantage of the ſolution is, that it is perfectly harmleſs, and does not therefore require the caution of being wiped off from the part, when the child is laid to the breaſt. Being alſo lightly aſtringent and deterſive, without creating the pain, or that unpleaſant and harſh dryneſs, which other aſtringents produce, renders it as promiſing, as experience hath proved it to be ſucceſsful, in this obſtinate complaint; which, beſides the great pain that attends it, has frequently fruſtrated a moſt laudable and pleaſing impulſe of nature, by preventing the fond mother from ſupplying the firſt wants of the tender infant, to which ſhe has given birth."

CHAP. XIII. Of the CONSUMPTIVE DISPOSITION brought on by SUCKLING.

The atrophia lactantium, tabes nutricum, or that emaciation ariſing, in ſome women, from the ſuckling of children, is a diſeaſe with which phyſicians are well acquainted; but its more frequent occurrence of late, in ſome parts of the kingdom, renders it now, more than formerly, an object of ſerious conſideration, eſpecially to the inferior claſſes of females, to whom it is particularly incident. In a very intereſting communication to the Medical Society of London, Dr. Walker, of Leeds, points out the cauſe of this growing malady, and forcibly draws the attention of practitioners towards it.

"It has," ſays he, "been painfully noticed, in ſeveral parts of this extenſive and commercial country, and particularly in this

place, that ſince the more plentiful introduction of tea into the families of the induſtrious poor, by the late reduction of its price, this diſeaſe has made an unuſually rapid progreſs. The difficulty with which animal food is procured by the lower ranks of ſociety, in quantity ſufficient for daily nutriment, has led many of them to ſubſtitute, in the place of more wholeſome proviſions, a cheap infuſion of this foreign vegetable, whoſe grateful flavour (and perhaps narcotic quality, which it poſſeſſes, in a ſmall degree, in common with moſt other evergreens) is found to create an appetite for itſelf, in preference to all other kinds of aliment that the ſcanty income of poverty allows theſe deluded objects to procure; though I am ſorry to have occaſion to add, that the lowering effects of tea-drinking lead too many of theſe to ſeek for relief from ſpirits, and other pernicious cordials, at the expence of health, and the ſure conſequences of penury and want.

"As this change in the article of diet has been very generally made, eſpecially by the females, and the younger branches of the families of the manufacturing poor, their conſtitutions have been rendered much leſs able to bear evacuations of any ſort, and particularly that of lactation. I may with great truth aver, that more than two hundred patients of this denomination have, within the laſt two years, come under my notice. Upon their application for relief, and the conſequent enquiry which I have been led to make reſpecting the nature of their diet, their almoſt invariable reply has been, that they have chiefly depended upon tea for their ſupport, at the ſame time that they were permitting an apparently healthy child to draw the whole of its nouriſhment from them.

"That it is debility, and an impoveriſhed ſtate of the whole ſyſtem, ariſing from a deficiency in the due ſupply of proper and ſufficiently nutritious aliment, at a time when the conſtitution particularly requires it, in conſequence of the continual waſte which the mother ſuſtains from the ſuckling of her infant, which lay the foundation of this diſeaſe; and that the lungs are but ſecondarily, or ſymptomatically, affected; is clearly evinced from an attention to the ſymptoms.

"The patient firſt complains of languor and general weakneſs; loſs of appetite; fatigue after exerciſe, though it be of the gentleſt kind; weariſome pains in the back and limbs; ſoon after which, ſymptoms of general atrophy come on; the face, in particular, grows thin, and is marked by a certain delicacy of complexion; paleneſs about the noſe; but with a ſmall degree of ſettled redneſs in the cheeks. In a ſhort time, if the patient ſtill continues to give ſuck, ſhe is ſeized with tranſitory ſtitches in the ſides, under the ſternum, or in ſome other part of the thorax, accompanied with a ſhort dry cough, and ſlight dyſpnœa upon any muſcular exertion; the pulſe alſo becomes frequent,

but ſeldom ſo hard as the inflammatory ſtate of the genuine phthiſis pulmonalis. Morning ſweats next make their appearance; abſceſſes and ulcers are often formed in the lungs; pus mixed with mucus is expectorated; the general weakneſs increaſes; the emaciated patient is unable to ſupport an erect poſture; and at laſt dies literally exhauſted.

"With reſpect to the method of treating this diſeaſe, my deſign is rather to point out the cauſe of its preſent unuſual prevalence, that ſuitable cautions may be timely given to the unſuſpecting ſufferers, than to offer to the public any new modes of practice. The late Dr. Fothergill, who was a correct obſerver both of nature and the effects of remedies on the human body, has (in the Medical Obſervations, vol. v. p. 348) made ſome excellent remarks on the uſe of the bark, &c. very applicable to the diſeaſe in queſtion; to which I am induced to add, for the ſake of the younger practitioner, a few obſervations which have been drawn from my own experience.

Firſt. "It has always appeared to be indiſpenſably neceſſary for the mother to wean her child immediately upon the appearance of ſymptoms of debility, as the moſt eſſential ſtep towards a cure.

Secondly. "To change the patient's diet from tea, and the leſs nutritive vegetables, to milk, and its various preparations; gruels, broths, and a ſmall quantity of mild animal food, along with a proper proportion of bread and eſculent roots; particularly potatoes, turnips, and carrots. Shell-fiſh, jellies, chocolate, ſago, ſalep, and tapioca, would all be highly proper, did not poverty prevent the far greater number of theſe patients from procuring them in ſufficient quantity; but as frequent inſtances of kindneſs are daily offered by the hand of opulence to theſe objects of compaſſion and diſtreſs, it is more than probable that the recital of ſuch articles of diet as are likely to afford relief, may have its uſe, in directing ſome friendly neighbour to a proper choice of them.

"The animal food which is allowed ſhould always be taken for an early dinner, and by no means late in the afternoon or evening; and is ſo far from increaſing the febrile ſymptoms in the firſt ſtage of this diſeaſe, when a ſtate of debility chiefly prevails, that for the moſt part it proves a powerful reſtorative, and the patients are ſoon ſenſible of the happy change, and gain additional ſtrength; eſpecially when this courſe has been aſſiſted by gentle tonics, ſuch as the following mixture of myrrh and ſal martis, which, with ſome alteration, is the ſame that Dr. Griffith has recommended in his Eſſay on the Hectic Fever.

(No. 19.) ℞ Gummi myrrhæ pulv. ʒj.
Tinct. cinchonæ ℥vj. tere ſimul et adde ſenſim,
Aquæ fontanæ ℥vj.

Salis nitri purif. ℈ij.
Ferri vitriolati gr. xij.
Syrupi balsamici ℥ss.

Fiat mistura, cujus capiat ægra cochl. duo, mane jejuna, hora undecima matutina, et quarta pomeridiana.

" In some cases, when there appears to be an exacerbation of fever in the afternoon, I have thought it more useful to confine the administration of this remedy to the forenoon, and to direct a few spoonfuls of the saline julep, or decoctum nitrosum, to be taken frequently in the afternoon, evening, and during the night if necessary.

" If, in the course of a week after the mixture has been regularly administered, the patient should remain free from pain, or sense of restriction in the thorax, difficulty in respiration, or any other symptoms indicating an inflammatory affection of the lungs, we may hope for a favourable termination of the disease, and be encouraged steadily to persevere. Nor in this case should bleeding be admitted of, even in the smallest quantity, as the patient's strength, as well as general habit, have been sufficiently reduced by the preceding circumstances of lactation and improper diet. Decoctions of the cinchona, moderately acidulated with the vitriolic acid, will now be proper, and greatly conducive to the patient's recovery, especially if these can be assisted by a change of situation from the town to the pure air of the country.

" If, however, which is sometimes the case when the disorder has been neglected, and the patient has continued to discharge the office of a mother longer than her ability permitted, the symptoms should indicate a more advanced state of the disease, and fixed pains in some part of the thorax should come on, with oppressed breathing, and a frequent hard pulse, then a small bleeding, to the amount of two or three ounces only, may be occasionally of use; and instead of prescribing the myrrh, bark, or vitriolic acid, it will be advisable to take off the inflammatory determination to the lungs, by strictly enjoining a milk and vegetable diet; keeping the bowels gently open by the mildest and least heating laxatives; moderating the symptomatic fever by cooling salines; and palliating the cough by mucilaginous mixtures, rather than by oily linctuses.

(No. 20.) ℞ Mucilag. gum. arabic. spiss.
Syr. simpl. aa ℥iij.
Syr. limonum ℥j.
Salis nitri purif. ʒj.

Fiat mistura, cujus sumatur cochl. j. quater vel sæpius in die, irritante tussi.

" The inflammatory spasm, or constriction of the thorax, should at the same time be relieved by the application of blisters to the part pained, renewing them as they heal, rather than keep-

ing them open: a practice which is not by far so efficacious, yet harasses the patient much more than repeating the blister as soon as the part has healed.

"When all or most of the inflammatory symptoms are removed by the means just now mentioned, these patients then bear the use of the myrrh, watery infusions of the bark, and the elixir of vitriol, with considerable advantage; as they are found by experience to be much safer, and more generally beneficial in these symptomatic cases, than in the genuine phthisis arising from the inflammation and suppuration of tubercles in the lungs themselves."

Dr. Walker properly advises, if the disease be advancing still further, accompanied with morning sweats, purulent spitting, prostration of strength, and the utmost degree of debility, the latter of which always accompanies this disease in a more remarkable degree than the true phthisis, that we should support the patient's strength, by the restorative means he has already directed; allowing, as in the first stage, a small portion of animal food, at least once a-day; without which, he says, our endeavours would be frustrated, and, instead of affording relief, would serve only to accelerate the patient's dissolution.

CHAP. XIV. PUERPERAL OR CHILD-BED FEVER.

THIS species of fever, as its name imports, is peculiar to women in child-bed; and is usually the most fatal of all the disorders to which the sex is liable. But notwithstanding the prevalence of it in all ages, its real nature has remained, to the present time, a subject of much dispute and uncertainty. The critical period of its invasion, when febrile commotions are apt to be excited by various accidents, and the equivocal symptoms which accompany it, have even afforded room for questioning whether it be a primary or a secondary disease. Some writers have considered it as proceeding entirely from an inflammation of the uterus; others have imagined it to be the consequence of an obstruction to the secretion of the milk; while the greater number have been inclined, for reasons equally if not more plausible, to impute it to a suppression of the lochia. If we examine this fever attentively, however, according to its natural course, and independently of all the accidental concomitant symptoms with which it is not essentially connected, we may safely pronounce it to be a primary disease of a particular characteristic, and perhaps not the necessary consequence of any of the causes above mentioned.

This fever is most generally incident to women within forty-eight hours after delivery, though it may supervene on the fourth

or fifth day, and sometimes considerably later. It is preceded, like other fevers, by a rigor, which is commonly violent; and, when happening during the time of labour, may be confounded with the pains of parturiency. In its earlier stage it is attended with the signs of inflammation. A great pain is felt in the back, hips, and the region of the uterus; which, in the part last mentioned, is accompanied with a sense of heat and throbbing. A sudden change in the quality or quantity of the lochia now also takes place; the patient is frequently troubled with a tenesmus; and the urine, which is very high coloured, is discharged in small quantity and with pain. At the first attack of the fever, the woman is generally seized with a vomiting of porraceous matter, as in the cholera morbus, to which disease it then bears a strong resemblance; but, instead of this symptom, there is sometimes only a nausea, or loathing at the stomach, with a disagreeable taste in the mouth. The belly swells to a considerable bulk, and becomes susceptible of painful sensations from the slightest impression. The tongue is generally dry, though sometimes moist, and covered with a thick brownish fur. When the fever has continued a few days, the symptoms of inflammation usually subside, and the disease acquires a more putrid form. At this period, if not at the very beginning of the disorder, a bilious or putrid diarrhœa, of a dangerous and obstinate nature, supervenes, and accompanies it through all its future progress; each motion to stool being preceded by a temporary increase, and followed by an alleviation of pain. The patient usually nauseates all kind of food and drink, except what is cold and acidulated. A brown or blackish sordes, the consequence of putrid exhalations, adheres to the edges of the teeth; a troublesome hiccough is at length produced, which greatly exasperates the pains of the abdomen; petechiæ or vibices also appear, with sometimes a miliary eruption, but which produces no mitigation of the disease. Through the whole course of the fever, the patient is affected with great anxiety and dejection of spirits.

Such in general is the course of the puerperal fever; the symptoms of which, however, may be often varied, according to the constitution of the patient, the degree of the disease, and its earlier or later invasion. When the woman is naturally weak, or her strength has been greatly reduced by immoderate evacuations after delivery; when the disease is violent, and immediately follows that period; its progress and termination are proportionably rapid and fatal. In such unfortunate circumstances, many have been known to expire within twenty-four hours from the first attack of the disease; nay, there are some instances where the rigor has concluded the scene. The catastrophe, however, is most generally suspended for some days; and the number of these is variable, though the eleventh from the commencement of the

fever may juſtly be fixed as the period which is uſually deciſive. In whatever ſtage of the diſeaſe an unfavourable termination may happen, it would ſeem as if the commencement of the patient's recovery were not marked with any critical revolution of the fever, as depending on an alteration of the humours; but that the cure is gradually effected, either by a ſpontaneous vomiting, or a long-continued diſcharge by ſtool of that porraceous matter, the exiſtence of which in the ſtomach is uſually evinced at the firſt attack of the diſeaſe. The moſt unfavourable prognoſtic, therefore, ariſes from ſuch a weakneſs of the patient as renders her unable to ſupport ſo tedious an evacuation as that by which the fever is overcome. When the lochia return to their former ſtate, when the ſwelling and tenderneſs of the abdomen abate, and there is a moiſture on the ſkin, we have reaſon to hope for a happy termination of the diſeaſe.

Though the puerperal fever may generally be aſcertained from the deſcription which has been given, and chiefly by that remarkable tenderneſs of the abdomen which particularly diſtinguiſhes it; yet, as ſome of its ſymptoms may be confounded with thoſe ariſing from other diſeaſes, and which require a different method of cure, it will be proper to mention here the circumſtances whereby it may be known with greater certainty.

The pains of the abdomen, attending the child-bed fever, may be diſtinguiſhed from thoſe called *after-pains*, by their uninterrupted continuance through the courſe of the diſeaſe, though ſometimes they ſuffer exacerbations: whereas, in the latter, they often totally intermit. They are alſo diſtinguiſhable by the abſence of fever with concomitant ſymptoms in the one, and their evident exiſtence in the other.

Many circumſtances evince a diſſimilarity between the puerperal and miliary fevers, notwithſtanding the ſymptoms of anxiety and oppreſſion are common to both; inſomuch that the nature of the approaching diſeaſe may be aſcertained at the commencement of its attack. In the puerperal fever the rigor is more violent, of longer duration, and not interrupted, as in the other. The pulſe is fuller and ſtronger; the ſkin is more hot; and the tongue, whether moiſt or dry, though generally the latter, is not of a white but browniſh appearance; and the urine is alſo higher coloured. Eruptions, which are critical in miliary fevers, procure no mitigation of the puerperal fever, and cordials generally increaſe it.

When the original attack of the puerperal fever happens to coincide with the febrile commotion which is excited in child-bed women by the milk, the nature of it may at firſt be miſapprehended; but the concomitant ſymptoms, and greater violence of the diſeaſe, muſt in a ſhort time diſſipate ſuch an error.

From all the moſt accurate accounts of this diſeaſe, and from

the period at which it generally commences, there seems reason to conclude, that it owes its rise more immediately to accidents after delivery. For it is allowed that it may follow a labour under the best and most favourable circumstances, though endeavours to dilate the os internum are supposed frequently to produce it. The more immediate causes generally assigned by authors are a stoppage of perspiration, the too free use of spices, and the neglect of procuring stools after delivery; sudden frights, too hasty a separation of the placenta, and binding the abdomen too tight. The putrid appearance, however, which this disease so soon assumes, affords ground to suspect that the predisposing cause of it is a vitiated state of the humours; for it is generally observed to be most prevalent in an unhealthy season, and among women of a weakly and scorbutic constitution.

Within these few years this fever has been treated of by several writers, most of whom have differed from each other in their sentiments of the nature of the disease. The first in the order of publication is Dr. Denman, who seems to be of opinion that it may derive its origin either from a redundancy or too great acrimony of the bile, the secretion of which appears to be much interrupted in the time of gestation. In Dr. Manning's treatise on this fever, he mentions its being highly probable that such a cause contributes greatly to produce the disease, especially where the putrid tendency of the humours is increased by unwholesome air and diet.

It has likewise been the fate of the puerperal fever, that no disease has more divided the sentiments of physicians in regard to the method of cure. The apparent indications and contra-indications of bleeding and other remedies, arising from the complication of inflammatory and putrid symptoms; the equivocal appearance of the vomiting and purging, as whether they be critical or symptomatical; and the different causes whence symptoms similar to each other may arise in pregnant women; all these circumstances concur to involve the subject in great obscurity and indecision. If we carefully attend to the several characteristics of the disease, however, so as to be able to distinguish it from every other puerperal complaint, and observe at the same time the usual manner of its declension, our judgment may be guided in the method of cure by the salutary efforts of nature. But in order to obtain a clearer view of the genuine indications, it will be proper to consider them under the several lights in which they have been generally agitated by authors.

One of the most essential points to be ascertained in the cure of the child-bed fever, respects the propriety of bleeding. A free use of the lancet has been generally regarded as the most successful expedient in practice; and there are some instances of critical hemorrhages which would seem to confirm its utility. But Dr. Denman thinks we may safely affirm from experience,

that for one who will be benefited by large bleeding, a much greater number will be injured, and that even almoſt irretrievably. Nor can this ſeem ſurpriſing, when we conſider the ſituation of child-bed women. In moſt, the evacuations conſequent upon delivery are ſufficient to diminiſh any undue ſuperabundance of the fluids; and if, as frequently happens, the diſeaſe be produced by too haſty a ſeparation of the placenta, the conſequence of which is generally a very copious diſcharge of blood, we can never ſuppoſe that nature will be aſſiſted in overcoming the febrile commotion, by the farther evacuation of the vital fluid, through the defect of which ſhe is now rendered unequal even to the ordinary ſupport of the animal economy. We may appeal to every practical phyſician, how much he has known the pulſe to ſink, and what a train of nervous ſymptoms he has obſerved to ſucceed an exceſs of the diſcharge above mentioned. Beſides, it is an axiom in phyſic, that a remedy which cures any diſorder will always prove ſufficient to prevent it; and therefore, if bleeding were the proper cure in the child-bed fever, the diſeaſe ought to have been prevented by a large evacuation of blood, when that happened previous to its ſeizure. Experience, however, in this, as in all other diſeaſes, is the only unerring guide we can follow; and whoever regulates his practice by fact and obſervation, will be convinced that bleeding, eſpecially in a large quantity, is, in general, very far from being attended with ſucceſs. Bleeding is ſeldom proper, except in women of plethoric conſtitutions, and in whom the ſigns of inflammation riſe high. Nor even in ſuch patients ought it to be repeated without great caution, and the exiſtence of ſtrong indications. Bleeding, when uſed in proper circumſtances, may unqueſtionably palliate the fever; but that it often ſhortens the duration of it appears to be a matter of much doubt. On this account the practice becomes ſtill more ſuſpicious and exceptionable, when we conſider that by venæſection improperly uſed, the perſon's ſtrength may be ſo far reduced as not to ſupport the tedious looſeneſs by which the diſeaſe is generally carried off. Though bleeding, however, ought in general to be uſed with great caution, there are certainly many caſes in which it is both neceſſary and advantageous.

The genuine nature and effects of the looſeneſs in this diſeaſe is another controverted point of the higheſt importance, and which merits the moſt attentive enquiry. Phyſicians, obſerving that women who die of the puerperal fever are generally moleſted with that evacuation, have been induced to conſider this ſymptom of the moſt dangerous and fatal tendency; and what, therefore, we ſhould endeavour by every means to reſtrain. In this opinion, however, they would ſeem to have been governed by too partial an obſervation of facts. For experience certainly authoriſes the aſſertion, that more women appear to have recovered of the child-bed fever, through the intervention of a diarrhœa, han have been deſtroyed by that cauſe. If it alſo be conſidered,

that purging is usually almost the only sensible evacuation in the more advanced state of the disease, and is that which accompanies it to its latest period, we shall have the strongest reason to think that it is critical rather than symptomatical, and ought therefore to be moderately supported, instead of being unwarily restrained. Nay, the advantage which is found to attend vomiting as well as purging, in the earlier stage of the disease, would seem to evince that the matter discharged by these evacuations is what chiefly foments the disease. Emetics and purgatives, therefore, in the opinion of Dr. Manning, are the only medicines on which any rational dependence is to be placed in this fever; at least, they are certainly such as are found the most successful. It is an established rule in practice to prescribe a vomit at the beginning of every fever attended with any nausea or loathing of the stomach, and where there is not any reason to apprehend an inflammation of that organ. Nor does the state of child-bed women afford the smallest ground for prohibiting our recourse to the same expedient in answering a similar indication.

It is so seldom a physician is called during the rigor preceding the puerperal fever, that he has few opportunities of trying the effects of remedies in that early state of the disease. When such occur, however, we should endeavour as much as possible to abate and shorten that period, as the succeeding fever is generally found to bear a proportion to the violence and duration of it. For this purpose, warm diluting drinks should be plentifully used, with a small quantity of volatile spirits or brandy. When Dr. Manning apprehended such an accident, he sometimes ordered the nurse to give immediately a dish or two of warm sack-whey; taking care that it was not too strong, which is a caution that ought always to be remembered: for though a freer use of the more cordial and spirituous kinds of liquors might perhaps soon abate the rigor, there is danger to be feared from their influence on the approaching fever, especially in women of a strong and healthy constitution. In all cases, warm applications to the extremities, such as heated bricks, towels, or toasted grains in a linen bag, may be used with perfect safety, and some advantage.

When the hot fit is advanced, the first thing Dr. Manning orders is some emollient injection, as chicken-water, or water and milk, which ought to be frequently repeated through the course of the disease. These prove beneficial, not only by promoting the discharge from the intestines, which seems in fact to be the solution of the disease; but also by acting as a kindly fomentation to the uterus and adjacent parts. With this intention they are particularly serviceable when the lochia are suppressed. Great care, however, is requisite in administering them, on account of the tenderness and inflammatory disposition, which at that time render the parts in the pelvis extremely susceptible of pain.

The next step in the method of cure ought to be, to promote

the discharge of the morbid matter both by the stomach and intestines. This intention is best answered by the following remedy prescribed by Dr. Denman:

(No. 21.) ℞ Antim. tartar. gr. ii.
Cetæ præp. ℈i.
Intime misceantur et ft. pulvis.

Of this Dr. Denman gives from two to six grains, and repeats it as circumstances may require. If the first dose do not procure any sensible operation, he repeats an increased quantity at the end of two hours, and proceeds in that manner, not expecting any benefit but from its sensible evacuation.

Should the disease be abated, but not removed (which sometimes happens), by the effect of the first dose, the same medicine must be repeated, but in a less quantity, till all danger be over. But if any alarming symptoms remain, he does not hesitate one moment to repeat the powder, in the same quantity as first given; though this is seldom necessary, if the first dose operates properly.

"It is to be observed," says Dr. Denman, "that as the certainty of cure depends upon the proper repetition of the medicine, the method of giving it at stated hours does not appear eligible. If the first dose produce any considerable effect by vomiting, procuring stools, or plentifully sweating, a repetition of the medicine in a less quantity will seldom fail to answer our expectations; but great judgment is required in adapting the quantity first given, to the strength of the patient and other circumstances. We are not to expect that a disease, which from the first formation carries so evident marks of danger, should instantly cease, even though a great part of the cause be removed."

Frequent effervescing saline draughts ought also to be given, which not only promote the evacuation by the intestines, but likewise increase the salutary discharges of urine and perspiration. These medicines are particularly serviceable in subduing the remains of the fever, after its violence has been broken by the more efficacious remedies above mentioned; but when they are used even in the decline of the disease, gentle laxatives of rhubarb and magnesia, as advised by Dr. Denman, ought to be frequently interposed; since, as he justly observes, without stools we can do little service

Notwithstanding the discharge by the intestines appears to have the most salutary effect in this disease, yet when the stomach has not been properly unloaded of offensive matter, though a great nausea and sickness had indicated the expediency of such an evacuation at the beginning of the fever, the continuance of the looseness is sometimes so long protracted as in the end to prove fatal. In this alarming state of the disease, when the stools are very frequent and involuntary, and all appearances threaten danger, Dr. Denman says, that a moderate clyster of chicken-water injected every one, two, or three hours, or as often as possible without fatiguing the patient too much, with the follow-

ing draught taken every six hours, has produced better effects than could be expected:

(No. 22.) ℞ Pulv. rad. ipecacuan. gr. i.
Confect. opiat. ℈j.
Aq. menth. sativ. vel
Cinnamon. ℥iss. M. f. Haustus.

While these medicines are using, we should endeavour to mitigate the pains of the belly by relaxing applications: (Vide No. 116. vol. I.) During the course of the disease, the patient ought to drink freely of diluting liquors, and abstain from every thing of a heating quality, unless great faintness should indicate the use of a small quantity of some cordial medicine.

Such is the practice recommended in this disease by Dr. Denman. We shall now take a cursory view of the sentiments of succeeding writers on this subject.

According to Dr. Hulme, the proximate cause of the puerperal fever is an inflammation of the intestines and omentum; for the confirmation of which opinion he appeals to dissections. He supposes the chief predisponent cause of the disease to be the pressure of the gravid uterus against the parts above mentioned. The omentum, says he, in the latter stage of pregnancy, must either be flat, which is its natural situation, or be rumpled or carried up by the gravid uterus in folds or doublings. When the latter is the case, which he observes is probably not seldom, the danger of a strangulated circulation will be greater.

Mr. White, who has also written on this disease, judiciously remarks, that were Dr. Hulme's hypothesis well founded, the disorder ought rather to take place before delivery, and be immediately removed at that period: that it would likewise most generally happen to women at their first labour, when the abdominal muscles are less yielding, and the pains more violent; the contrary of which is most frequently experienced to be the case.

It also deserves to be remarked, that, upon Dr. Hulme's supposition, we cannot account for the disease being more common and fatal in large towns and in hospitals than in the country and private practice, while other inflammatory disorders are more endemic among those who live in the latter than the former situation. Even admitting the friction of the intestines and omentum against the uterus to be as violent as Dr. Hulme supposes, is it not highly improbable that any inflammation could be occasioned by the pressure of such soft substances upon each other? Or, were this effect really produced, ought not the puerperal fever to be more common and fatal after the most laborious deliveries? But this observation is not supported by experience.

Dr. Hulme, in favour of his own hypothesis, alleges that it gives a satisfactory answer to the question, "Why all lying-in women have been, and ever will be, subject to this disease?" In this proposition, however, the doctor supposes such an universality

of the diſeaſe as is not confirmed by obſervation. It is affirmed upon undoubted authority, that in many parts of Britain the puerperal fever is hardly known; whereas, were it really produced by the cauſes he aſſigns, it would be equally general and unavoidable.

But how peculiar ſoever this author's ſentiments are in reſpect of the proximate cauſe of this diſeaſe, they have not led him to any method of cure different from the eſtabliſhed practice. On this ſubject Dr. Hulme divides his obſervations into two parts, comprehending under the former the more ſimple method of treatment, and under the latter the more complex. He ſets out with remarking, that the patient being generally coſtive at the beginning of the diſeaſe, an emollient opening clyſter will often give immediate relief; but if this ſhould not prove effectual, recourſe muſt be had to cathartics. Thoſe which he found anſwer his purpoſe beſt, were the *ſal catharticus amarus*, the *oleum ricini*, *antimon. tartar.* and antimonial wine. When the bowels have been ſufficiently cleared and the pain abates, he adviſes encouraging a gentle diaphoreſis by medicines which neither bind the body nor are heating; ſuch as ſmall doſes of ipecacuana, emetic tartar, and antimonial wine, combined with an opiate in a moderate doſe, and given once or twice in the courſe of twenty-four hours; adminiſtering the ſaline draughts in the intermediate ſpaces. If, preceding or during this courſe, a ſickneſs at ſtomach or vomiting attend, he adviſes aſſiſting the efforts of nature, by drinking plentifully of camomile tea, warm water, or any other diluting liquor. He concludes with recommending a cooling regimen, reſt of body, and tranquillity of mind; prohibiting all kinds of bandage upon the abdomen, and enjoining particular attention to the ſtate of the bowels, which ought to be kept gently open for ſome time, even after the diſorder ſeems to be gone off, till the patient be quite out of danger.

So much for the ſimple treatment: we now proceed to the ſecond part, where he deſcribes the method of practice when the diſeaſe is in its more irregular and complicated ſtate.

When a diarrhœa accompanies the diſeaſe, he obſerves that it ought by no means to be checked, but ſupported, by ordering the patient to drink plentifully of mild aperient liquors. If the pain of the hypogaſtric region be attended with ſtitches in the ſides or over the pit of the ſtomach, and a pulſe that reſiſts the finger pretty ſtrongly, he remarks that bleeding would then be highly neceſſary: declaring, however, his opinion, that, in the puerperal fever, bleeding is to be conſidered only as a ſecondary means of relief, though the firſt in point of time: that it ought to be adviſed with great caution; and that the greateſt dependence is ys to be placed upon evacuations by ſtool.

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danger. White, above mentioned, imputes the puerperal fever to

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a putrescent disposition of the humours contracted during pregnancy, and aggravated by the hot regimen commonly used by women in child-bed. In conformity to this opinion, the chief means which he recommends for preventing the disease is a cool regimen and free circulation of air, which he evinces to be of the greatest importance. In respect of bleeding, he informs us, that, upon the strictest enquiry, he cannot find that those who have bled the most copiously have had the greatest success, either in private or hospital practice. He even seems to question the propriety of this evacuation in any case; but approves of emetics, cathartics, and clysters, for cleansing the *primæ viæ*, and likewise of such medicines and diet as will correct the putrid humours: adding, that an upright posture and free ventilation are at all times useful, and absolutely necessary, both for the prevention and cure of the disease.

Another writer who treats of the child-bed fever is Dr. Leake, who has published the result of his observations on this disease from April, 1768, to the autumn of the year 1770; but chiefly from December, 1769, to May, 1770, during which period the child-bed fever prevailed much about London.

Dr. Leake tells us that this fever generally commenced the evening of the second or morning of the third day after delivery, with a rigor or shivering fit. Sometimes it invaded soon after delivery; and at other times, though rarely, it has seized so late as the fifth or sixth day. Now and then it seemed to be occasioned by catching cold, or by errors in diet; but oftener by anxiety of mind. Sometimes the thirst was great; though the tongue had, in general, a better appearance at the beginning than is common in other fevers. It was seldom if ever black or very foul; but, as the disease advanced, became white and dry, with an increase of thirst; and at last was of a brownish colour towards the root, where it was slightly covered with an inspissated mucus. The loss of strength was so great and sudden, that few of the patients could turn in bed without assistance even so early as the first or second day after the attack. The lochia, from first to last, were not obstructed, nor deficient in quantity; neither did the quality of this discharge seem to be in the least altered from its natural state; a presumption, says the author, that the uterus was not at all affected. Of this he was convinced by making a considerable pressure above the pubes with the hand, which did not occasion pain; but when the same degree of pressure was applied higher, between the stomach and umbilical region, it became almost intolerable. A perfect crisis seldom if ever happened in this fever, which he imputes to the great oppression of the vital powers, whereby they were rendered unable to produce such an event. When the disease proved mortal, the patient [ge]nerally died on the 10th or 11th day from the first attack[. Of] those who died of the fever, the omentum was found supp[urated]

an inflammation of which part, or of the inteſtines, Dr. Leake concludes to be the proximate cauſe of the diſeaſe.

In conſequence of this idea of the cauſe of the diſeaſe, Dr. Leake affirms that venæſection is the only remedy which can give the patient a chance for life. But, though it be the principal reſource to be depended upon at the beginning of the fever, he obſerves that it will ſeldom prove of ſervice after the ſecond or third day; and, if directed yet later, will only weaken and exhauſt the patient; when, matter having begun to form in the omentum, the progreſs of the diſeaſe can no longer be prevented by that evacuation. At this period the blood begins to be tainted by the abſorption of the purulent fluid; and the fever, from being inflammatory, is changed into one of a putrid nature.

After bleeding in ſuch a quantity as the ſymptoms require, he adviſes that the corrupted bile be evacuated and corrected as ſoon as poſſible; that the diarrhœa, when exceſſive, be reſtrained by emollient anodyne clyſters and gentle ſudorifics, or even by opiates and mild aſtringents, when the patient's ſtrength begins to ſink under the diſcharge; and, laſtly, that where the ſigns of the putrefaction or intermiſſion take place, antiſeptics and the Peruvian bark may be adminiſtered.

The great uniformity of the ſymptoms in all Dr. Leake's patients might authoriſe an opinion, that the fever which he deſcribes was in a great meaſure a diſeaſe *ſui generis*, and depended much upon the conſtitution of the air preceding and during the period in which the fever prevailed.

Dr. Kirkland has made ſome judicious obſervations on this ſubject. He rejects the opinion that the puerperal fever is a diſeaſe *ſui generis*, and ariſes always from the ſame cauſe. The particular ſituation of child-bed women, he acknowledges, occaſions a ſimilarity in the appearance of all the febrile ſymptoms: but he affirms that the ſame kind of fever may be produced by various cauſes; for inſtance, by an inflammation of the uterus or abdomen, by putrid blood or other matter, and putrid miaſma. The ſymptoms, he obſerves, will vary according to the time of ſeizure. If the fever happens in three or four days after delivery, all the ſymptoms uſual to the ſituation of the patient will make their appearance; but if it do not invade till the milk has been ſecreted, and the lochial diſcharge be nearly finiſhed, the ſymptoms, if the breaſts are properly drawn, will, for the moſt part, be thoſe only which are common to that kind of diſorder by which the fever has been produced.

With reſpect to the cure of puerperal fevers, Dr. Kirkland adviſes the antiphlogiſtic method when they ariſe from inflammation; but when this method fails of ſucceſs, and a diarrhœa ſupervenes, [illegible] diſeaſe has changed its nature, having become more or leſs [illegible], and requires a very different treatment.

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merit attention. No one, ſays he, would purge and bleed to cure the colliquative fever ariſing from the abſorption of matter in large wounds; and yet the only difference is, that in the puerperal fever the matter abſorbed from the uterus, &c. acts with more violence, becauſe the blood is commonly thinner, and the habit in a more irritable ſtate. We ſee, continues he, that abſorbed matter purges as effectually as if any purging medicine had been given by the mouth; and may we not therefore do harm by additional purging, when there has been a large evacuation, eſpecially as purges in this caſe are incapable of entirely removing the *fomes morbi*?

He conſiders the Peruvian bark as the principal remedy, as ſoon as the pulſe ſinks, the heat is leſſened, and the ſtomach will bear it. If the bark increaſe the diarrhœa beyond moderation, he joins with it ſmall doſes of laudanum; but if the diarrhœa ſhould entirely ſtop without the fever going off, in place of laudanum he adviſes a proper quantity of rhubarb. Should the diarrhœa, notwithſtanding the uſe of the medicines propoſed, become ſo violent as to endanger the patient, he joins Mr. White in recommending the columbo root, which is a warm cordial, and removes the irritability of the ſtomach and inteſtines more powerfully than any other bitter he knows.

Of this diſeaſe alſo, as it appeared in Derbyſhire and ſome of the adjacent provinces, an account has been publiſhed by Dr. Butter. Concerning the cauſes and nature of the diſeaſe, he obſerves, that pregnancy ſeems to add much to the natural ſenſibility of the female conſtitution; becauſe at this period women are often ſubject to a train of nervous ſymptoms, which never moleſt them at other times. During geſtation, likewiſe, the appetite is for the moſt part keen, while the digeſtion appears to be impaired; and this weakneſs is increaſed not only by improper food, of which the woman is frequently deſirous, but alſo by the inactivity attending her ſituation. To theſe circumſtances, it is added, that the inteſtinal paſſage being interrupted by the uterine preſſure, coſtiveneſs generally prevails. From the ſeveral obſervations here enumerated, Dr. Butter concludes, that the proximate cauſe of the puerperal fever is a ſpaſmodic affection of the firſt paſſages, with a morbid accumulation in their cavity: and upon this ſuppoſition he endeavours to account for the various ſymptoms of the diſeaſe.

In treating of the method of cure, he lays down two indications; the former of which is to promote two, three, or four ſtools daily, in a manner ſuited to the ſtrength of the patient, till ſuch time as they reſume a natural appearance. The ſecond indication is to relieve all uneaſy ſymptoms, ſuch as heat, thirſt, head-ach, &c.

With reſpect to the opinion entertained by Dr. Butter of the

cause of the puerperal fever, it nearly coincides with that of Mr. White. But however plausible it may appear, we are not entirely satisfied that a disease attended with so peculiar symptoms as the puerperal fever, can depend principally upon an irritability, which is not restricted either to the pregnant or puerperal state.

The late Dr. Thomas Young, professor of midwifery in the university of Edinburgh, although he published nothing on the subject of the puerperal fever, wrote a very ingenious dissertation respecting it, which was read in the Philosophical Society of Edinburgh. In that dissertation, after giving a very accurate account of the symptoms of the disease, which coincides very nearly with the account given by others, he endeavours to shew, that the puerperal fever, strictly so called, is in every instance the consequence of contagion; but he contends that the contagious matter of this disease is capable only of producing its effect, in consequence of a peculiar pre-disposition given by delivery and its consequences. In support of this doctrine, he remarks, that for many years the disease was altogether unknown in the lying-in ward of the Royal Infirmary at Edinburgh; but that after it was once accidentally introduced into the hospital, almost every woman was, in a short time after delivery, attacked with it; although prior to her delivery she may have lain even for weeks together, not only in the same ward with the infected, but even in the very next bed. He remarks, that it was only eradicated from the hospital in consequence of the ward's being entirely emptied, thoroughly ventilated, and new painted. After these processes, puerperal females in the hospital remained as free from this disease as formerly. The puerperal fever, according to Dr. Young, has very generally a strong tendency to the typhoid type; although he allows, that in the beginning it is not unfrequently attended with inflammatory symptoms, and even with topical inflammation, particularly in the intestinal canal. On this idea, he considers the puerperal fever as admitting of the same variety of treatment with other affections depending on contagion, in which sometimes an inflammatory, sometimes a putrescent, tendency prevails; such, for example, as small-pox or erysipelas. But from the prevailing putrescent tendency in this affection, he considers the free access of cool air, with the liberal use of antiseptics, as being very generally requisite.

It deserves to be remarked, that though the several writers who treat of this subject have conducted their method of cure conformably to their particular idea of the cause of the disease, respecting which their sentiments are very different, they seem to have been equally successful in the treatment of their patients. Indeed the several writers differ less from each other in their method of cure than might be expected, where so great an opposition of theoretical sentiments prevails. For after endeavouring

to eſtabliſh indications correſponding to their particular ſyſtems, thoſe who contend for the expediency of promoting the inteſtinal diſcharge diſſuade not from a recourſe to phlebotomy when the diſeaſe is attended with inflammatory ſymptoms; while, on the other hand, the moſt ſtrenuous advocates for bleeding admit the utility of the former evacuation. It appears, therefore, that a due regulation of the alvine diſcharge is neceſſary through the whole courſe of the fever, but venæſection only ſometimes.

The following caſes, which fell under the notice of Dr. Leake, furniſh many valuable facts relative to this formidable diſeaſe, for which reaſon we inſert them nearly in his own words.

CASE I.—Elizabeth Waters, a young woman of a ſtrong healthy habit, aged twenty-one, was delivered in the Weſtminſter New Lying-in hoſpital, April the 7th, 1768. On the fourth day after, ſhe complained of head-ach, which ſhe ſaid was owing to her being diſturbed by another patient in labour, who lay near her in the ſame ward: her pulſe was tolerably good, and neither very full nor frequent; but, as her head-ach continued till the next morning, eight ounces of blood were then taken from the arm, which afforded her much relief. She had milk in her breaſts, and the lochia were diſcharged in due quantity, without any pain or tenſion of the belly. Two days after, the pain in her head returned with violence, attended with thirſt and fever, for which ſhe loſt ſeven ounces more blood: ſhe took a laxative mixture, which had its proper effect; and afterwards the ſaline draughts every four or five hours, from which ſhe ſeemed better; but, as the pain in her head ſtill continued, the doctor directed leeches to her temples the next evening, which gave her eaſe.

She was apparently much better for a few days, her appetite being good, and her aſpect cheerful; but ſoon after relapſed, and was ſeized with ſevere and excruciating pains, like thoſe of acute rheumatiſm, in her limbs and body: ſhe became quite helpleſs, and was not able to turn herſelf in bed without aſſiſtance.

" I attended this patient," ſays Dr. Leake, " with Dr. Brickenden, one of the phyſicians of the hoſpital. We directed antimonial powders, which ſhe took occaſionally, but without much relief, as the pains continued, with a ſlow, lingering fever, for ſeven or eight days; and, when they abated, were ſucceeded by a number of bluiſh diſcoloratiens on the ſkin, which were terminated by abſceſſes in different parts of her body. As they advanced ſlowly, and did not point with tenſion and redneſs, but were ſoft, and of a pale livid hue, we directed the bark, with wine and good nouriſhment, to quicken the circulation and aſſiſt nature in bringing them forwards, for they plainly appeared of the critical kind; but, notwithſtanding they were conſtantly poulticed twice a-day, not one of them came to ſuppuration, even at the end of five weeks from the beginning of the diſorder:

ſhe was therefore removed to the Weſtminſter hoſpital, where the abſceſſes, in number eighteen, as I was informed, were opened; and, after remaining ſome weeks there, ſhe at laſt recovered."

CASE II.—Elizabeth Becket, aged twenty-ſix, and of a healthy conſtitution, after a difficult labour, which laſted ſeveral hours, was delivered of a dead child at the hoſpital, February the 18th, 1769. She was affected with head-ach, and ſickneſs at ſtomach, from the day of delivery, but did not vomit.

Feb. 19th. Her pulſe being frequent, and ſomewhat full and ſtrong, and the head-ach violent, eight ounces of blood were directed to be taken away; an emollient clyſter was then adminiſtered, and ſhe afterwards took the ſaline draughts, with ſperm. ceti, every five or ſix hours. Towards evening ſhe had four bilious ſtools, and appeared better.

20th. Her thirſt was exceſſive, her tongue white and dry; ſhe perſpired little, and had three evacuations by ſtool; ſhe diluted plentifully with weak tea, and took her medicines as before.

21ſt. Slept little, her eyes were blood-ſhot and prominent, and her head-ach not abated; her ſkin was dry; and her pulſe being ſtronger than uſual in ſuch caſes, eight ounces more blood were taken away.

22d. She ſlept the preceding night; her head-ach greatly relieved, and all the febrile ſymptoms manifeſtly abated; notwithſtanding, ſhe remained weak and helpleſs, and had involuntary ſtools for a few days after; but, as her ſtrength increaſed, this inconvenience went off, and in a fortnight's time from the firſt attack ſhe perfectly recovered.

The milk continued till the fifth day, and the lochial diſcharge did not ſeem altered from its natural ſtate.

"I would not here have it inferred," ſays the doctor, "that theſe two patients recovered becauſe bleeding was directed; but rather from their having this fever when the ſeaſon was not epidemical; for I have already remarked, that the attack is not then ſo violent, and all the ſubſequent ſymptoms are leſs ſevere. The ſhivering fit in the beginning is generally leſs, and the diarrhœa and bilious vomiting are either inconſiderable, or do not appear at all; the pulſe is neither ſo quick nor weak, and the diſeaſe, inſtead of being terminated about the tenth or eleventh day, is often protracted beyond that period, from acute becoming truly chronical, and then ſeldom proving fatal."

CASE III.—Juliana Thompſon, aged twenty-one, and of a delicate habit, having received a ſtroke on her belly, was ſuddenly ſeized with labour, and delivered in a chair as ſhe was coming to the hoſpital, Dec. 7, 1769.

She continued tolerably well for the two firſt days, but was languid and dejected in ſpirits, having had a ſlight uterine he-

morrhage from the time that ſhe received the hurt to that of being delivered.

Dec. 10th. Was feveriſh and thirſty, and complained of great pain in her head; there was no appearance of milk, and the lochia were diſcharged in natural quantity. She took lenitive elect. with oil of almonds, which procured her two or three evacuations; thirſt and fever were abated, and head-ach was much relieved.

11th. Continued better, and was able to ſit up in bed.

12th. Her face was florid; her cheeks were beſet with a deep crimſon colour, and the pulſe was quick and weak; the tongue looked clean, though her thirſt was intenſe; ſhe diluted plentifully with tea and barley-water; the ſaline mixture with ſperm.ceti, was given occaſionally, and a clyſter of beef-water directed to be adminiſtered. Towards evening difficulty of breathing came on, with oppreſſion at her breaſt, and pain in her left ſide.

Dr. Leake and Dr. Ford directed the tartar emetic, in the third part of a grain, to be given every four or five hours, and a bliſter to be applied to her ſide; the emollient clyſter was alſo repeated.

She had ſix or ſeven motions in the night, and the next day appeared eaſier, but was languid and weak; her pulſe continued very quick, and the bliſter did not riſe. As there was ſediment in her urine, with ſigns of remiſſion, they thought it adviſable to try the bark in decoction; but it purged her immoderately, although the ſimple cinnamon water was added, and therefore it was left off.

Next day ſhe complained of pains ſhooting downwards from her ſtomach to the navel, for which a volatile liniment was applied; but, as it did not procure much relief, ſhe had a warm bath the day following, a long flannel gown being next her ſkin; ſhe was afterwards put into a warm bed, and ſupplied with beef-tea and other fluids, in order to encourage-perſpiration. Bladders, half filled with warm water and wrapped in flannels, were applied to her ſtomach and ſides, where ſhe ſtill complained of pain and oppreſſion; and the emollient clyſters were alſo continued, with tinct. opii, gtt. xxx.

The next day, her belly began to ſwell, though the purging ſtill continued; ſhe had partial faint ſweats on her breaſt and face, and was now extremely weak, though perfectly ſenſible, but could take nothing except nouriſhment for ſeveral days before her death, which happened on the 25th of December, being the fifteenth day from the time of the febrile attack.

CASE IV.—Mrs. Y. a lady near the Abbey, in Weſtminſter, young, and of a ſtrong and healthy habit, after a labour perfectly natural, was ſuddenly attacked with a violent ſhivering fit, the third day after delivery, being the 1ſt of January, 1770. She

was alſo affected with a thrilling uncommon ſenſation, as if a cold wet ſheet had been wrapped round her body.

She complained of head-ach, and was ſick at ſtomach; during the exceſs of febrile heat, her pulſe beat a hundred and thirty ſtrokes in a minute, and was more full and ſtrong than is uſual in this fever; her countenance was florid, and much altered from its natural ſtate, having an unuſual ſtare with her eyes.

Small portions of emetic tartar, viz. the fourth part of a grain, were given with the ſaline mixture, every four hours: ſhe diluted plentifully with barley-water and balm-tea, but did not perſpire.

On the ſecond day after the attack, a violent bilious purging came on; the antimonial powders were then given by longer intervals; the ſaline mixture was diſcontinued, and emollient clyſters were directed. She took rice-water, and the white decoction for common drink.

The fever and diarrhœa continued violent for three or four days; her belly ſwelled, and ſhe frequently complained of much pain at the bottom of her ſtomach, and towards the navel. Sometimes there ſeemed to be obſcure ſigns of remiſſion in the morning; but, towards evening, the fever again returned with violence.

"She apparently grew worſe," ſays Dr. Leake, "and, as I was at that time ill, and unable to give her due attendance, I deſired Dr. Hunter might be called in, which was accordingly done. He directed eight ounces of blood to be taken away; the clyſters to be repeated, and a bladder, filled with ſcalded bran, to be applied warm to the umbilical region. The next day I met Dr. Hunter and Dr. Hugh Smith: the ſaline draughts, with ʒß of confect. Damocratis, were directed every ſix hours, and in other reſpects much the ſame method was purſued as before.

"When Dr. Smith viſited this patient with me the day following, we found her delirious, and therefore, inſtead of the confect. Damocratis, ℈ j. of the pulv. contrayer. c. was added to each ſaline draught, which was ordered to be continued as before: four ſpoonfuls of tincture of roſes were given by intervals, and clyſters of chicken-water directed to be adminiſtered frequently. The two following days I was prevented from ſeeing her: during which, ſhe took medicines of the warm cordial kind, but without perſpiration, or any abatement of the febrile ſymptoms.

"A few days before her death, ſhe was delirious; her eyes were blood-ſhot, and filled with involuntary tears; a miliary eruption appeared very thick on her breaſt and body; and her ſtools, which were frequent and very fœtid, came away inſenſibly. Leeches were then applied to her temples; the clyſters were repeated; and her ſtrength was ſupported by nouriſhment and wine, but without a ſalutary effect; for on the 12th of January ſhe died, and ſeveral hours before her death became perfectly ſenſible.

"The lochia were diſcharged in due quantities; but there was no ſecretion of milk.

"The ſigns of putrefaction in this patient, before death, were very evident; the ſmell of the room, for ſeveral days after ſhe was buried, being intolerably offenſive, notwithſtanding it had been thoroughly cleanſed, and fumigated with frankincenſe.

"Purgative medicines, which are found ſo extremely beneficial in the ſecondary putrid fever after the ſmall-pox, cannot here be employed to advantage, becauſe of the tenderneſs of the bowels, and exceſſive loſs of ſtrength from the preceding diarrhœa; ſo that Peruvian bark, with opiates and frequent nouriſhment, ſeem moſt likely to afford relief, where that is in the power of medicine; but, unfortunately, the ſtate of the patient is generally at this time ſuch, for the reaſons already given, as excludes all human aſſiſtance.

"Where the ſtools are exceſſively putrid, it might be worth while to try the effects of fluids which contain a large quantity of fixed air, given in clyſters."

Case V.—Mary Evans, aged twenty-nine, was delivered, February the 5th, 1770, without any uncommon circumſtance attending her labour, which was eaſy and natural. Her habit of body was apparently good; but, being crooked and narrow-cheſted, ſhe was ſubject to habitual difficulty of breathing. She took an anodyne draught, with ſperm. ceti, and paſſed a good night after delivery.

Feb. 6th. She perſpired gently, and was free from pain and fever.

7th. At ſeven in the morning, attacked with a ſlight ſhivering fit, which laſted about fifteen minutes, but was not ſucceeded by any violent degree of feveriſh heat; ſhe took the antimonial powders, every three or four hours, and fell into a gentle perſpiration, which ſeemed to relieve her; an emollient clyſter was alſo directed.

8th. Reſted the preceding night, and continued tolerably eaſy; ſhe had one bilious ſtool in the morning, was weak and languid, but free from pain, and got ſome ſleep.

9th. At nine in the morning had a ſhivering fit, which was relieved by drinking warm fluids, and the application of hot flannels to her extremities and ſides; in a few hours, the cold fit in a ſlight degree returned, and was ſucceeded by fever, and partial ſweats on her breaſts and temples; ſhe had ſome reſt the former part of the night, but at two o'clock was waked by violent gripings and tormina in the bowels, followed by nine or ten bilious ſtools; after which ſhe had eaſe.

10th. About twelve at noon was ſeized with great difficulty of breathing, and, in the time of inſpiration, affected with intolerably acute pain ſtriking down from the breaſt to the navel;

but there was no tension or pain in the belly, nor any symptom that could strictly be called uterine, the lochia being neither fœtid nor deficient in quantity: her pulse at the same time was quick and unequal; but, considering her great difficulty in breathing, six ounces of blood were taken away, and the following mixture was given occasionally; a broth clyster with gtt. xx. of tincture of opium, was also directed; and she took rice-water, or decoct. alb. for common drink.

(No. 23.) ℞ Lact. ammoniac. ℥vij.
Sperm. ceti solut. ʒij.
Elix. paregoric. ʒiij. misce.

Fiat mistura cujus sumat cochlearia duo subinde urgente dolore vel dyspnœa.

After bleeding, her pulse became somewhat stronger, and its strokes were more distinct and free; the pain and difficulty of breathing were a little abated, and she passed a tolerably good night with refreshing slumbers.

11th. In the morning, she was weak, but free from pain or much fever, and breathed with considerable ease; about three in the afternoon she became feverish again; and in the evening her pulse was quick, and almost imperceptibly weak; her limbs were cold; and partial clammy sweats overspread her face and temples.

Dr. Leake directed two spoonfuls of the following mixture to be given every two or three hours.

(No. 24.) ℞ Spec. e. scord. c. cum opio ʒj.
Aq. cinnam. ℥vj.
Sp. nucis moschat. ℥j.
Syr. e. cort. aurant. ℥ß fiat mistura.

An anodyne clyster was directed as before; her extremities were kept warm with hot flannels, and she passed a restless night, being delirious by turns. At four in the morning she had four black fœtid stools, which were voided without pain. At seven she was perfectly sensible, and so continued till the hour of ten, at which time she calmly expired, being the fifth day from the febrile commencement.

The lochial discharge was natural, and she had milk at the usual time, which left her soon after the febrile attack.

The following were the appearances on dissection:

After making an incision into the abdomen, from the navel to each anterior angle of the os ilium, and turning down the muscular flaps over the pubes, several ounces of white curd-like pus covered the surface of the intestines; it did not run out when the abdominal cavity was laid open, being of a much thicker consistence than common matter. On further examination, it was found that the greatest part of the omentum was melted down, and formed this purulent concrete; and that the small portion

remaining was much inflamed, and flightly adhered to the inteftines. About a pint and a half of putrid fluid, like whey, was found in the cavity of the pelvis, mixed with concreted matter, and bits of black grumous blood, which feemed to have efcaped from the eroded veffels of the omentum.

The uterus was contracted to the fize of a fwan's egg, and fhrunk down below the brim of the pelvis: on cutting into its cavity, fmall flaky pieces of the falfe chorion were found adhering to its furface, but it did not contain any kind of fluid: in fhort, this part, as well as the bladder, was perfectly found, and without the leaft mark of inflammation, or other morbid affection.

The fubftance of the liver was alfo found, but appeared pale, bloodlefs, and as if it had been par-boiled: the gall-bladder was full of blackifh bile.

The ftomach and inteftines were in their natural ftate; the firft contained half a pint of watery blackifh fluid, which fmelled like rancid bile; and in the laft was found twice that quantity of dark-green fluid, fomewhat like that in the ftomach. The fpleen was large, but found.

The fternum being raifed, the lungs appeared of a livid hue; but, on cutting into their fubftance, neither pus nor tubercles were found, nor any figns of inflammation; only the left lobe, at its pofterior and fuperior part, flightly adhered to the pleura.

The veins on the neck and breaft, on the left fide, were enlarged to three times their natural diameter, and filled with blood of a bluifh colour.

As this difeafe is principally feated in the omentum, and uniformly produces inflammation of that part (Epiploitis), it will ftrongly enforce a neceffity for the early lofs of blood, together with the immediate application of blifters to the fides, or even to the umbilical region, to prevent, if poffible, a morbid affection of the vifcera, which, once begun, is rapid in its progrefs, and generally fatal in its termination.

Case VI.—Ann Hewatfon, aged twenty-fix, and of a delicate habit, was delivered February the 5th, 1770. Her cafe was fomewhat laborious, and the child's birth fucceeded by a difcharge of grumous blood from the uterus; the placenta came away without affiftance, about an hour after delivery; fhe was eafy in the night, and had refrefhing fleep.

6th. Being inclined to fleep, took a fperma ceti emulfion without any opiate; perfpired gently, had a good night with natural reft, and waked free from pain or fever. The lochial difcharge was large in quantity and fœtid; but the belly was foft, and without pain.

7th. Continued eafy, and had a moderate fecretion of milk.

8th. About ten in the morning, after a breakfaft of tea, without any evident caufe, fhe was fuddenly attacked with rigor,

which shook her whole body like an ague fit; the shivering lasted about half an hour, gradually becoming less and less intense from its onset.

She took the emetic draught already mentioned, which operated mildly towards evening; the antimonial powders were given by due intervals. She was extremely feverish, thirsty, and restless at night; but somewhat relieved by a free perspiration, which came on about twelve o'clock.

9th. Had four bilious frothy stools, preceded by violent pains and gripings in the bowels: an emollient clyster was injected. Her pulse was quick and weak, and the febrile symptoms violent. She had a very restless night, but only one evacuation, and without pain.

10th. In the morning, had nine or ten blackish stools, mixed with mucus, which were extremely offensive, and attended with great pain: her pulse was excessively quick; she breathed laboriously, as it were by jerks, and complained of great oppression across her breast and stomach, and of pain striking down under her shoulder-blade when she drew her breath. Eight ounces of blood were taken away, and a starch clyster with gtt. xxx. of tinct. thebaic. was administered: she now only took rice-water, with a small portion of brandy in it, as every thing else purged her immoderately. Towards evening seemed better, her pulse not so frequent, the pain and feverish symptoms were somewhat abated.

11th. Hot and restless, with faint sweats on her breast, neck, and face. Emollient clyster repeated, without the opiate; after which she had some sleep.

11. The clyster came away with a bilious stool; she was manifestly much worse, her pulse being very quick, and thirst intense; she breathed laboriously, had a fixed crimson colour in her cheeks, and was also much troubled with a cough and viscid phlegm, which she was unable to expectorate; but found relief by taking the following mixture:

(No. 25.) ℞ Sal. tartar. ʒj.
Succ. limon. ℥iss. Peracta effervescentia, affunde,
Aq. hyssop. ℥vj.
Elix. paregoric. ʒij.
Syr. balsamic. ʒiij.

Fiat mistura cujus sumat cochlearia duo subinde pro re nata.

13th. She was supported by a cordial julep when faint, with light nourishment, and wine given by spoonfuls.

14th. Breathed with great difficulty; her pulse very quick and weak. She had partial sweats on her stomach, breast, and face, attended with coldness of the extremities, great languor, and all the symptoms of approaching death. She died about two in the morning, being the eighth day after the attack.

The following are Dr. Leake's remarks on this case.

" At the time of the shivering fit," says he, " which happened on the third day, this patient had plenty of milk in her breasts, which afterwards suddenly disappeared, and was totally gone off in the evening, her breasts being then loose and empty: the defect of milk is therefore manifestly a consequence of the morbid cause.

" There is, however, one circumstance, which, although it seems to controvert this opinion, I cannot help mentioning, viz. those who were seized with this fever were not subject to abscesses of the breasts; and of those who happened to have such abscesses, I have never known one die; neither are they subject to diarrhœa, or much symptomatic fever, although the pain attending a suppuration of the breast is often very acute.

" The putrid discharge of lochia in this case appears merely accidental, and only owing to a corruption of a coagulated blood retained in the uterus, from the access of air, like that which came away soon after delivery."

Case VII.—Elizabeth Gardner, aged thirty-two, was delivered in the hospital the 11th of February, 1770; her labour was natural, and her habit of body strong and healthy, although she had been troubled with a violent cough for several weeks before delivery.

12th. Her pulse was full and frequent attended with great thirst, sickness at stomach, and pain in her head and bowels; she took the saline mixture, with sperma ceti, and an emollient clyster was administered: she also drank plentifully of weak tea and barley-water, but did not perspire, and passed the night without sleep.

13th. Dr. Leake visited this patient with Dr. Ford. Her pulse being exceeding quick, and more full and strong than usual, attended with excessive thirst, a violent head-ach, and dry skin, they directed ten ounces of blood immediately be taken away: lenitive electuary was afterwards given, and an emollient clyster, which produced two or three lax motions: she diluted plentifully, but did not perspire, and passed a restless night. The secretion of milk was moderate, and the lochial discharge natural.

14th. In the morning had some refreshing sleep, with gentle perspiration; thirst and fever somewhat abated: she had three evacuations by stool, but still complained much of intolerable shooting pain in her head, especially at the time of coughing: eight ounces more blood were taken away, which was not near so sizy as that first drawn.

15th. Much disturbed by her cough in the night, perspired little, and had no sleep, though her head-ach was somewhat better.

16th. In the evening her pulse was extremely quick, thirst

immoderate, and all the febrile ſymptoms increaſed: ſhe was ſick at ſtomach, and had three bilious ſtools, with ſevere gripings in her bowels. The antimonial powders were given every three or four hours: about two hours after taking the ſecond, ſhe threw up a large quantity of viſcid phlegm, mixed with bile, and in the night had eight or nine black ſtools, the laſt very fœtid, and mixed with blood and mucus. She was delirious by turns, very reſtleſs, and had partial faint ſweats on her breaſt and face.

The yolk of egg, with mucilage of ſtarch, was diſſolved in rice-water, and injected as a clyſter; and ſhe took the following draught:

(No. 26.) ℞ Sperm. ceti ſolut. ʒſs.
Pulv. e Tragacanth. C. ℈i.
Aq. cinnam. ℥iſs.
Tinct. opii gtt. xv.
Syr. papav. alb. ʒj. fiat Hauſtus.

17th. Her ſtomach and bowels were much relieved; ſhe ſlept in the night, and waked refreſhed; her pulſe was weak, but equal, and ſhe perſpired moderately.

18th. Better in all reſpects, but complained of great ſoreneſs in her bowels at the time of coughing: ſhe took the anodyne draught at night, and the ſtarch clyſters were continued with light nouriſhment.

19th. Weak, but continued eaſy; her pulſe regular, and ſhe perſpired gently. Inſtead of medicines, ſhe now took calf's-foot-jelly and nouriſhing broth, to repair her ſtrength.

20th. From this time gradually continued to recover, and, on the the 9th of March, ſhe was diſcharged from the hoſpital in perfect health.

Case VIII.—Ann Simms, aged twenty-two, apparently healthy and ſtrong, was delivered on Tueſday, the 6th of March. Her caſe was ſomewhat laborious, the child's head being large, and detained ſeveral hours within the bones of the pelvis. An emollient clyſter was directed in the evening, and ſhe took an anodyne draught; paſſed a reſtleſs night, and without the leaſt perſpiration.

7th. Feveriſh and thirſty, pulſe quick and ſomewhat full, and her ſkin dry. She took the ſaline mixture, and diluted plentifully with nitrous drink; a clyſter of beef-water was given in the evening; had a very indifferent night, and little reſt.

8th. A little better; ſhe had milk in her breaſts, and, being coſtive, complained of head-ach. A cathartic clyſter was adminiſtered in the evening, which procured two evacuations, and her head was eaſier.

9th and 10th. Somewhat feveriſh and reſtleſs, though free from pain.

11th. Continued very reſtleſs: the pulſe was quick, her

tongue white and dry, and her thirst intense, without any perspiration: at night she took a saline draught, with ten grains of nitre and gtt. xv. of tincture of opium; but had scarcely any rest.

12th and 13th. The febrile symptoms continued; and, though she diluted plentifully, her skin remained parched and dry. Six grains of James's powder were then administered, which puked her twice, and afterwards procured her three motions. At night I directed her another powder, and an emollient clyster, with gtt. xxx. of tincture of opium: she had some sleep in the night, but no free perspiration.

14th. In the morning, apparently better, and disposed to sleep; but towards evening was sick at stomach, and threw up a large quantity of bitter, glairy fluid; in the night, she was seized with severe pains in the bowels, followed by seven or eight bilious stools, and afterwards had some sleep.

15th. Her pulse quick, skin dry, and her hands tremulous; her looks were wild and staring, and her cheeks beset with a deep crimson hue; she breathed laboriously, and complained of great pain in her side and belly towards the navel: at night, she had six black watery stools; after which an anodyne draught and a starch clyster were directed: she seemed relieved, and slept for several hours.

16th. The pain in her belly and side was but little abated; she was extremely hot and restless, and could not sweat. I directed three spoonfuls of the following mixture to be given, which produced no perspiration, although she took it every two or three hours.

(No. 27.) ℞ Ammon. præp. ʒj.
Succ. limon. recent. express. ℥iss misce.
Aq. menth. sativ. ℥vj.
Tinct. croci ʒiii.
Syr. ejusd. ℥ss. fiat mistura.

17th. Much worse in all respects; her pulse being exceedingly quick, and almost imperceptibly weak; cold clammy sweats overspread her breasts and face, which now became pale and death-like; and about twelve at noon she expired.

The lochia were discharged in natural quantity, and she had milk in her breasts till within a day or two of her death.

When the body was opened, the next day in the evening, the inferior lateral portion of the omentum was found much inflamed, its vessels being turgid, and as it were injected with blood; but the greater part of it was destroyed by suppuration: what remained adhered to the small intestines, which were also slightly cemented to each other, where their convolutions came in contact.

The uterus was contracted to the size of a large fist, and lay

at the bottom of the pelvis; the fundus uteri ſeemed to partake of the general inflammation which had apparently firſt affected the omentum, and afterwards ſuperficially overſpread the inteſtines, meſentery, and contiguous parts; but, on cutting into its ſubſtance, it was perfectly firm and ſound, although it had a livid appearance towards the cervix and os internum, which might probably be owing to the violence ſuſtained by thoſe parts in time of labour.

In the cavity of the pelvis was found about a pint of whey-coloured fluid, with three or four ounces of thick matter, which did not uniformly mix with it, but floated in it like curds in whey, together with ſeveral bits of black coagulated blood.

The liver was ſound, but remarkably pale, and the gall-bladder turgid, with a large quantity of olive-coloured bile, in conſiſtence equal to that of honey, and with difficulty ſqueezed through the cyſtic duct. The ſtomach contained about half a pint of black oily liquor, reſembling that which was voided by ſtool.

The contents of the thorax were ſound, and without any morbid appearance, except a ſlight adheſion of the right lobe of the lungs to the pleura.

Case IX.—Ann Cook, aged twenty, of a delicate habit, after eaſy labour, was delivered in the hoſpital the 13th of March, 1770. The ſame evening ſhe complained of ſickneſs at ſtomach, with pain in her bowels, and paſſed a reſtleſs night.

14th. Continued ſick at ſtomach; took the antimonial emetic draught, and threw up a large quantity of bilious ropy fluid from the ſtomach; alſo had one lax ſtool; after which a broth clyſter was injected with thirty drops of tincture of opium. She paſſed a tolerable night, perſpired moderately, and had ſome refreſhing ſleep.

15th. Free from pain in the bowels, and had a good night's reſt.

16th. Sick at ſtomach, and vomited a quantity of poraceous fluid; her pulſe was quick, and her thirſt exceſſive: ſhe took the antimonial powders every four or five hours; but perſpired little, and had a reſtleſs night.

17th. In the morning complained of great ſickneſs, and burning heat at ſtomach, with violent head-ach; and threw up near a tea-cupful of dark-green liquor, which ſeemed to be almoſt pure bile; ſhe had alſo five bilious motions.

At night, ſuddenly ſeized with acute pain in her ſide, and great oppreſſion at the breaſt; being likewiſe almoſt ſuffocated with tough phlegm, which ſhe did not bring up: her pulſe was exceeding quick and ſomewhat weak, and her countenance ghaſtly; but, as ſhe breathed with vaſt difficulty, ſeven ounces of blood were ordered to be taken away, and that ſhe ſhould draw in the ſteams of warm water into her lungs at each inſpiration: ſhe

afterwards took one of the antimonial powders, which occafioned her to vomit twice, and gave her two motions. She was extremely weak, but breathed with more freedom and eafe; an emollient anodyne clyfter was injected, and fhe was ordered a fpoonful or two of warm fpiced wine, when faint.

18th. In the morning, fhe breathed with more eafe, and was free from the load at her breaft; her pulfe beat regularly, but was extremely languid: bladders, with hot water wrapped in flannels, were applied to the foles of her feet; fhe took light nourifhment often, and now and then a fpoonful of fpiced wine.

19th. Had refrefhing flumbers the preceding night, and gained ftrength: nothing was now given but frequent nourifhment.

20th. Continued better; directed the following draught to be taken twice a-day, which greatly increafed her ftrength:

(No. 28.) ℞ Infuf. cinchonæ ℥ifs.
Sp. cinnam. ʒiii.
Tinct. lavend. comp. gtt. xxx.
Confect. alkerm. ʒi. fiat hauftus.

In about a week's time fhe was much recovered, and went out of the hofpital the 2d of April, in perfect health.

Case X.—Philadelphia Ford, aged twenty-eight, was delivered the 14th of March, 1770, and continued well till the 3d day, when fhe complained of great pain in her head, with laffitude and inability to turn in bed: her countenance was florid; fhe had a brown dry cruft on her tongue, and unquenchable thirft: her appetite left her, and there was not milk enough to give fuck. The medicines ufually adminiftered on fuch occafions had but little effect; but all the febrile fymptoms were much relieved by the appearance of a red cutaneous fwelling on the joint of her great toe: in a few days, another fwelling of a livid colour appeared below her hip; they were poulticed and fomented, but did not fuppurate; the laft threw off a black mortified flough, and difcharged fanious ichor, She was ordered a ftrong infufion of bark, with tinct. aromat. and, by allowing her wine and good nourifhment, fhe recovered.

Case XI.—Harriot Trueman, young, and of a ftrong healthy conftitution, May the 2d, was delivered of a monftrous child, which prefented with the arm; fo that the cafe was preternatural in a double fenfe.

As this patient was of a plethoric habit, and fubject to cough, feven ounces of blood were taken away, before the delivery was attempted; to prevent, in fome meafure, the danger of inflammation, which might arife from the violence applied in turning the child.

After delivery, an emollient clyfter was directed, and a faline mixture, with fpermaceti and fyrup of poppies, of which fhe was to take three fpoonfuls every four or five hours, as occafion required; fhe was free from pain, and had a good night.

3d. Perſpired gently, continued free from pain and fever, her cough leſs violent, and ſhe paſſed her water with eaſe; the mixture was continued, and a clyſter as before given in the evening; ſhe remained eaſy during the night, and reſted well.

4th. Continued perfectly eaſy, and paſſed a good night: the lochial diſcharge was natural, and ſhe had no pain in the region of the uterus.

5th. About three in the afternoon was ſeized with difficulty of breathing, and oppreſſion acroſs her breaſt and ſtomach; ſeven ounces of blood were immediately taken away, which was exceedingly ſizy. The ſtrokes of her pulſe were weak, quick, and indiſtinct after bleeding, but ſoon became leſs frequent, and more ample and ſtrong; ſhe found herſelf much relieved, and could then breathe with freedom; was diſpoſed to gentle perſpiration, and refreſhing ſlumbers in the night; the mixture and emollient clyſter were repeated. The ſecretion of milk was moderate.

6th. She continued eaſy, had a natural evacuation by ſtool, and ſlept by intervals.

7th. At four in the morning, her difficulty of breathing and cough returned; ſhe was ſick at ſtomach, vomited up a ropy bilious fluid, and had five black ſtools. Her pulſe was weak, frequent, and intermitting; her breaſts ſubſided, and the milk ſuddenly diſappeared.

She had a powder, with the third part of a grain of the tartar emetic, and a ſcruple of the pulv. contrayer. c. to be repeated every four or five hours after, if the firſt had no ſenſible operation by ſweat or vomiting; and alſo an emollient clyſter.

She paſſed a reſtleſs night without perſpiration, her belly began to ſwell, and ſhe had ſeveral involuntary bilious ſtools.

8th. Reſpiration was frequent and laborious, pulſe quick and weak, her ſkin dry, and ſhe complained much of pains in her ſides, and acroſs her belly near the navel, at the time of drawing her breath.

A fomentation was applied to her belly and ſides; the powders were repeated, and a ſtarch clyſter injected in the evening, with gtt. xxx of the tinct. opii.

She took rice-water, with a ſmall quantity of brandy, for common drink, and a ſpoonful of ſpiced wine when faint. The involuntary purging ſtill continued, and ſhe had no reſt.

9th. Complained of pains in her breaſt and belly, the difficulty of breathing increaſed, her pulſe was quick and almoſt imperceptibly weak; ſhe was delirious by turns, had cold clammy ſweats on her neck and face, and about four the next morning ſhe expired.

When the body was opened, the greateſt part of the omentum was ſuppurated, and converted into thick matter; the remaining portion being much inflamed and ſlightly adhering to the folds of the inteſtines. The cavity of the pelvis and abdomen contained

about three pints of putrid ferum, with clots of concreted pus, and fmall pieces of coagulated blood.

The uterus was much contracted, and fhrunk down to the inferior part of the pelvis: its fubftance was found, though the os tincæ was fomewhat livid; which appearance, not being confidered as morbid, has already been taken notice of.

Scarcely any marks of inflammation appeared on the inteftines or mefentery; the liver was apparently found, and the gall-bladder full of yellow bile, which had pervaded its coats, and dyed the contiguous parts of a faffron hue: but this could not be looked upon as a morbid appearance. The ftomach contained a pint of blackifh fluid, like that voided by ftool, and which had the appearance of putrid bile.

On raifing the fternum, two ounces or more of matter was lodged upon the mediaftinum; and the thorax contained a fmall quantity of the fame kind of whey-coloured fluid as that found in the abdomen. The lungs were apparently found, only the left lobe adhered flightly to the pleura, at its pofterior part.

This woman's child was monftrous: it had no thumbs; the parietal bones were wanting; and not above two ounces of brain was found in the cavity of the fcull: the upper part of the fcalp adhered ftrongly to the internal furface of the placenta; fo that, when the child was extracted, this part was pulled along with it, though, luckily, it was not attended with any degree of flooding.

Case XII.—A lady in Holborn, aged twenty-eight, and of a delicate habit of body, was delivered by her midwife on Saturday morning, the 7th of July, 1770. The birth was not attended with any dangerous or uncommon circumftance; fhe was eafy after delivery, and refted well at night.

8th. Towards evening fhe complained of head-ach, but had feveral hours' fleep the following night.

9th. Waked in the morning with acute pain in her right fide; her head-ach was worfe, and about three in the afternoon fhe had a violent fhivering fit, with coldnefs of the extremities, and great internal heat acrofs her breaft and ftomach: her pulfe became exceeding quick, her head-ach violent, her tongue white and dry, and the pain in her fide extremely acute and deep-feated; fhe breathed laborioufly, and had no perfpiration, except on the breaft and face.

Eight ounces of blood were taken away, and one of the antimonial powders given, which was to be repeated every two or three hours, if the firft had no effect. An emollient clyfter was adminiftered, and bladders of warm water were applied to the foles of her feet and fides: fhe paffed a reftlefs night, without any abatement of pain or difficulty of breathing.

Two of the powders were taken; the firft created naufea, but

did not prove emetic, nor produce any confiderable perfpiration. The blood was not fo fizy as might have been expected.

10th. The pulfe being full, hard, and frequent, her fkin dry, and refpiration difficult and painful, eight ounces more blood were drawn, the powders were repeated every four or five hours, and a blifter was applied to the affected fide in the evening: fhe drank plentifully of common emulfion with nitre, to prevent ftrangury, and relieve her difficulty of making water, which had been trouble-fome from the beginning.

11th. Had no fleep the preceding night; and, as the pain in her head and difficulty of breathing ftill increafed, fhe was again blooded in the night, to the quantity of fix ounces.

She was much relieved foon after this laft bleeding; the pain abated; fhe could then breathe with more freedom, her pulfe became more foft and lefs frequent, and a free and equal perfpiration broke out all over her body.

At this time, fhe began to be troubled with a cough, and was much oppreffed with white vifcid phlegm, which was expectorated with great difficulty: fhe had two motions with a large difcharge of fæces, which came away with the fecond clyfter. The laft-drawn blood was uncommonly fizy, and the gelatinous cruft on its furface extremely thick and tenacious. She had milk in her breafts, which were drawn twice a-day, and the lochial difcharge was natural.

As fhe perfpired freely, the powders were difcontinued, and the faline draughts, with oxymel fcillit. given every five or fix hours. The blifter rofe well; the emulfion was continued, and the emollient clyfter ordered to be repeated as before.

About nine at night, all her feverifh fymptoms returned; her pulfe was exceeding quick, fkin dry, her thirft intolerable, and the pain in her fide and difficulty of breathing were fo violent, that her apothecary was called up in the night, and took away fix ounces more blood: one of the antimonial powders was alfo given, after which fhe again began to perfpire, with an abatement of all the feverifh fymptoms, and had two or three hours' refrefhing fleep.

12th. Something better; but in the evening was attacked with a deep-feated violent pain in her other fide, between the breaft and axilla, fo as almoft to prevent her from breathing; her cough was troublefome, and fhe expectorated with much difficulty; four ounces more blood were drawn, and the following draught prefcribed:

(No. 29.) ℞ Ammon præp. gr. xv.
Succ. limon. ʒiii.
Aq. menth. fativ. ℥j.
Tinct. opii gtt. xij.
Syr. papav. alb. ʒj.
Mifce fiat hauftus, vefperi exhibendus.

She drank plentifully of thin diluting liquors with nitre; the

clyſter was repeated as before; and by intervals ſhe took the following mixture:

(N ɔ) ℞ Sperm. ceti ſolut. ʒii.
Lact. ammon. ℥vii.
Elix. paregoric. ʒiii. fiat miſtura.

She had an exceeding bad night, but ſlumbered a little at times.

13th. Apparently better, but complained of ſevere rheumatic pains about her back and loins: her cough was more and more troubleſome, and greatly interrupted her reſt, but was relieved by the mixture with gum ammoniacum, to which a ſmall quantity of oxymel ſcillæ was added.

White-wine whey was ordered to be given her in the night, to ſupport her ſtrength; and ſhe took panada with currant jelly for nouriſhment.

14th. She had two or three hours' refreſhing ſleep the preceding night, and the feveriſh ſymptoms were ſomewhat abated; but, as there was not yet the leaſt ſediment or ſeparation in her urine, which was high-coloured, the uſe of bark was deferred, and the anodyne draught given at night as before, which always eaſed her cough, and procured ſleep.

15th. Her pulſe was quick and tremulous, her extremities cold, and her face and breaſts were bedewed with a clammy ſweat. She breathed laboriouſly, with convulſive jerks, and complained of great weight and oppreſſion acroſs her breaſt: though perfectly ſenſible, ſhe had a wild eager countenance, a trembling hand, and apparently all the ſymptoms of approaching death.

Ordered her four ſpoonfuls of a ſtrong cordial julep, and ſinapiſms to her feet; her extremities were rubbed with hot flannels, and cloths dipped in brandy were applied to her ſtomach.

In a few hours ſhe revived, but grew reſtleſs, and almoſt frantic, inſiſting upon cold water to drink, which was given her: the next day ſhe was ſtill alive, and when viſited about one in the afternoon was perfectly ſenſible, but ſo weak and languid that ſhe was ſcarcely able to ſpeak.

A cordial julep was given when faint, and the following draught, with bark, to be taken every two hours, or as often as her ſtomach would bear; but, as ſhe had ſeveral involuntary motions, five grains of the pil. e ſtyrace were inſtantly given, which reſtrained the looſeneſs, and procured ſome hours' ſleep, whilſt the bark was prepared.

(No. 31.) ℞ Decoct. cinchonæ ℥iſs.
Pulv. cinchonæ ʒſs.
Sp. cinn. ʒiij.
Syr. papav. alb. ʒj.
Fiat hauſtus alternis horis exhibendus.

At eleven o'clock at night, ſhe had taken four draughts, and had little return of fever; but, as her ſkin was dry and thirſt

intense, she was allowed plentifully of toast and water, which she particularly desired, and swallowed with great eagerness; after which, she gently perspired towards morning, and, growing cooler, began the draughts as before. The urine was amber coloured, but without sediment or separation.

16th. Better in all respects, but very weak, and her rest much disturbed in the night by the cough: draught continued as before, and by intervals wine and light nourishment were given often, and in small quantities.

17th. Continued free from fever, and able to sit up; she had three stools, was much disturbed by her cough, and complained of a sore throat.

She had pil. e styrace three grains, and the draughts were only to be given three times a-day.

There was no remarkable change till the 21st, at which time she was almost unable to swallow, her throat being much worse, and the tonsil glands slightly ulcerated; her cough was troublesome, and several miliary eruptions appeared on her body.

The following draught was given every four or five hours, and her throat was fumigated with the steams of hot vinegar poured on lavender flowers, which gave her great relief.

(No. 32.) ℞ Decoct. cinchonæ ℥iss.
Extract. cinchonæ. moll. ℈j.
Sp. vitriol. æther. gtt. xx.
Sp. cinnan. ʒiij.
Confect. alkerm. ʒi. misce & fiat haustus.

Her strength was supported by nourishment of easy digestion as often as her stomach would dispense with it, and a little spiced claret was given whenever she pleased.

23d. Removed into the country for the benefit of air. In a few days she was so much better in all respects, as to leave off her medicines, and only took a tincture of bark and cardamoms, as a stomachic, in a strong infusion of tansy.

"This fever," says Dr. Leake, "was complicated with pleurisy in a high degree; a case of all others the most dangerous; and, as pleuretic symptoms sometimes accompany a morbid affection of the abdominal viscera in this disease, perhaps it might reasonably be asked, whether the diarrhœa and inflammation of the omentum, which so usually succeeded the rigor, were not here prevented by early and repeated bleeding?

"From what may be observed in the foregoing history, it does not appear eligible to wait for a distinct intermission of this fever lest a severe attack of the febrile paroxysm should in the mean time carry off the patient; I think a remission of the symptoms, especially if attended with any critical evacuation, is in general sufficient to justify the liberal and immediate use of the bark; but when they are at first manifestly inflammatory, when bleeding and evacuations

had not preceded, I have often ſeen it given without any good effect."

CASE XIII.—Sarah Evans, about twenty-one years of age, was delivered in the hoſpital on Monday, the 19th of November, 1770; ſhe had a natural labour, and was well the two firſt days after delivery; but on the third day ſeized with fever, which the matron believed was owing to ſurpriſe, as the febrile ſymptoms appeared very ſoon after.

As this patient was of a very delicate irritable habit, and lax fibre, it was not thought proper to direct bleeding, particularly as her ſkin was moiſt, and her pulſe quick and weak.

She took a mixture with aq. ammon. acet. and tinct. opii; emollient clyſters were alſo directed to be frequently adminiſtered. After the fever had gradually increaſed for a few days, ſhe complained of difficulty of breathing, and pain in the ſide of her belly, towards the navel. Warm flannels were applied to the part affected, and bladders of hot water to her feet.

She drank beef-water, and weak pimento tea for common drink; and, being extremely languid, was allowed a ſmall quantity of white wine and light nouriſhment by turns.

On the 29th of November ſhe was ſtill weaker; the heart almoſt ceaſing to do its office, and the circulation being at the loweſt ebb. The next morning ſhe calmly expired, without any ſigns of mortal anguiſh.

On opening the body, evident marks of inflammation appeared, particularly in the abdomen: great part of the omentum was deſtroyed, and converted into matter; what remained had become gangrenous; its diſeaſed membranous expanſions here and there overſpread the inteſtines, and ſlightly adhered to their ſurface, which was alſo inflamed, particularly at their convolutions; thoſe parts, from the additional effect of preſſure, being as it were ſuperficially ſoldered together: that portion of the omentum which is inſerted round the great curvature of the ſtomach, was alſo conſiderably inflamed.

The uterus had a natural appearance, and was perfectly ſound, as well as all the parts peculiar to it.

The liver was alſo unaffected, except its peritonæal coat, which, being diſſolved by the inflammation, lay on its ſurface in a tender gelatinous ſtate. The gall-bladder was turgid with bile.

The mediaſtinum was inflamed, but the lungs were perfectly ſound, and free from adheſion to the pleura.

The whey-coloured putrid fluid contained in the abdomen was nearly the ſame in quantity and appearance as that in the former caſes.

Where the pulſe was extremely ſoft and weak, and the circulation languid, it is difficult to account for ſo ſudden and high a degree of inflammation, as to produce a collection of matter, or any inflam-

matory affection of the abdominal viſcera; but ſo it was: and therefore, in all ſuch caſes, where bleeding ſeems improper, it will be requiſite immediately to apply ſinapiſms, or a large bliſter, to the umbilical region.

Case XIV.—Hannah Jeffries, of a ſtrong healthy conſtitution, the fourth day after delivery, which was natural, was ſeized with a ſhivering fit, ſucceeded by head-ach and great ſickneſs at ſtomach, with ſix bilious ſtools; ſhe was affected with univerſal languor and dejection of ſpirits, was very reſtleſs, and had a ſmart quick pulſe.

A clyſter with beef-water was given, and ſhe diluted plentifully with warm balm-tea, but did not perſpire.

The next morning ſhe had two purgative evacuations, and laboured under much anxiety and oppreſſion at her breaſt: broad purple-coloured ſpots, which roſe a little above the ſurface of her ſkin, ſoon after appeared all over her body; they were very thick on her breaſt and face, but not attended with any mitigation of the ſymptoms, except for an hour or two in the beginning.

She took one of the antimonial powders, which was repeated every three or four hours, without any ſenſible evacuation whatever: as ſhe was not better in the evening, the eruption appearing livid, and her extremities being cold, a cordial julep was given her now and then; bliſters were applied to the inſide of her arms, and cataplaſms to her feet; the emollient clyſter was repeated, and ſhe was allowed white-wine whey for common drink.

The two following days all the febrile ſymptoms increaſed, with the difficulty of breathing, although the bliſters, which had been applied, produced their proper effect; and thus growing gradually worſe and worſe, ſhe died at four in the morning, on the 5th of May, 1771, being the ninth day from that of her delivery.

This caſe was the only one where the omentum was neither ſuppurated or gangrenous; there was, indeed, ſome ſign of ſlight inflammation, and a conſiderable quantity of fluid in the abdomen, which looked like the ſerum of blood; but it was not purulent, as in the former caſes. Hence it is probable, that a gradual accumulation of fluid in the abdomen commences before death, as the lymphatics loſe their abſorbent power.

Case XV.—Sibyl Watſon, aged twenty-two, was delivered in the hoſpital, Oct. 2, 1776, of her firſt child, without any uncommon circumſtance attending labour, which was eaſy and natural: the placenta came away without aſſiſtance, about ten minutes after delivery. She reſted well in the night, and perſpired gently.

This woman was delicate in conſtitution, and had, during the two laſt months of pregnancy, been troubled with a ſlight pain in her left ſide, attended with cough and difficulty of breathing; but theſe complaints had in a great meaſure been removed by bleeding ſome time before delivery.

3d. In the morning, ſhe was perfectly free from pain and fever, but about ſix in the evening, without any apparent cauſe, was ſuddenly attacked with burning heat diffuſed all over her body, which was ſucceeded by coldneſs and ſhivering, great anxiety and oppreſſion at the præcordia, and univerſal pain. For theſe complaints ſhe took a few drops of the tinctura thebaica, in a little mint water.

At nine, ſhe had the following ſymptoms, viz. violent pains in the left ſide of the thorax, which ſtruck down to the left groin, ſometimes to the right, and frequently darted from thence to the navel. She had great ſoreneſs all over the abdomen, a frequent nauſea and retching to vomit, which brought up nothing but phlegm; her breathing was ſhort and laborious, the pulſe quick, weak, and unequal, ſometimes fluttering, and at other times regular, with ſome ſmall degree of hardneſs; her voice was weak and tremulous, her countenance pale, the ſkin hard and rough, without the leaſt moiſture on any part of her body, except the breaſt and neck: ſhe complained, at intervals, of acute pain in the ſtomach, which continued for a ſhort time, but frequently returned; ſhe had alſo a fixed pain in the right ſhoulder.

Dr. Leake directed ten ounces of blood to be taken from the arm, which gave her immediate relief; the pulſe became more regular, and the oppreſſion about the præcordia and difficulty of breathing were almoſt totally removed. The fourth part of a grain of emetic tartar was given with the ſaline draught every three or four hours, and ſhe drank plentifully of warm diluting liquors.

4th. No reſt the preceding night; in the morning ſhe had a bilious ſtool, her pulſe was full and quick, attended with difficult reſpiration, and great oppreſſion at the præcordia, with frequent ſighings; her tongue was white, but moiſt, and ſhe complained of univerſal pain and ſoreneſs all over the abdomen: the tartar emetic was continued, with large doſes of camphorated julep every three hours: ſhe diluted plentifully, but did not perſpire.

5th. Had eight bilious ſtools, the pain and difficulty of breathing were conſiderably abated, her complexion more lively, the pulſe regular, differing little from a healthy ſtate; a gentle moiſture was diffuſed over the whole body; ſhe had a moderate ſecretion of milk, and the lochia were diſcharged in their natural quantity Two ounces of a ſtrong decoction of bark were now preſcribed, and directed to be given every four hours; ſhe reſted well in the night, and perſpired gently.

6th. Had five bilious ſtools without pain, and was much better in all reſpects. The decoction of bark was continued.

7th. Almoſt every complaint vaniſhed: ſhe was ſo much better, as to be able to walk about the ward without aſſiſtance, and in due time was diſcharged from the hoſpital perfectly recovered.

CASE XVI.—Sarah Davies was delivered at the Weſtminſter

Lying-in hofpital, December 4th, 1778. The lochial difcharge and excretions in general were natural.

8th. The pulfe full and frequent; refpiration difficult. She was thirfty, had pain in her head, and, as fhe expreffed it, at her heart alfo. By the matron's order, balm-tea and barley-water were given for common drink.

9th. She was vifited by Dr. Leake, who prefcribed the antimonial powders, and bottles of warm water to her feet.

11th. Better in every refpect, with abatement of thirft, perfpiration moderate, the bowels laxative, and pulfe not fo quick.*

12th. Worfe, as fuppofed, from anxiety of mind; pulfe low and frequent, the jaws ftrongly contracted, and breathing difficult, with pain in her bowels, and loofe offenfive ftools. Dr. Leake directed a blifter to the fide, and bolufes of camphor, mufk, and opium, which were given when they could be got into her mouth.

13th. Pulfe low and quick, and ftools frequent; fame medicines continued.

14th. Purging more violent, attended with flow fever; thirft violent, and fkin dry. Vifited by Dr. Leake, who directed a cold infufion of bark and antimonial powders.

15th and 16th. Delirious in the night, ftools fœtid, pulfe quick and languid. Antimonials omitted, and the camphorated julep ordered to be given often, with a ftrong infufion of bark.

17th. Much the fame. Medicines continued.

18th. Worfe in the night; the abdomen much fwelled; ftools black, fœtid, and involuntary. The medicines were continued as long as fhe could take them, and an opiate at night was given.

19th. In the morning the patient died.

The body was opened the next day. The abdominal integuments being removed, the omentum was found inflamed on one fide. The inteftines were much diftended with wind, efpecially the colon. On the ftomach was found a fmall gangrenous fpot. The other vifcera, as well as thofe of the thorax, had no difeafed appearance. The contents of the pelvis were found, and the uterus contracted to the fize of a fmall melon.

* With refpect to the number of patients delivered, and likewife thofe who died, in the Weftminfter New Lying-in hofpital, the account, as appears by the hofpital books, ftands thus: From the 20th of April, 1767, to the 30th of November, 1769, out of 285 delivered, three had the child-bed fever, of whom Eliz. Walters and Eliz. Becket recovered; and Sufannah Vernon, who had twins, died; alfo Ann Moody, of the fmall pox, the day after delivery. From the laft date, to the 15th of May, 1770 (being the epidemic feafon), out of fixty-three delivered, nineteen had the

child-bed fever, besides others more slightly affected with it; of which number eleven died in the hospital, and two more out of the house, who were removed at the request of their friends.

From the 15th of May, 1770, to the 29th of September, 1772, out of three hundred and five delivered, two died, viz. Sarah Evans, and Hannah Jeffreys.

This fever was also epidemical in London in the year 1760, of which twenty-four died in the British Lying-in hospital, from the 12th of June to the latter end of December; there being no instance of any such mortality in so short a time till the year 1770, when it was again extremely fatal.

We shall conclude this chapter with observing, that the continental writers on this disease uniformly consider it as occasioned by *lacteal metastasis*. A French surgeon, Cit. Guinot, supposing an acidity and coagulation of the milk, strongly advises the administration of *carbonate of potash* (salt of tartar), and has given some cases in support of this theory. Dr. Michaelis, of Hanover, on the other hand, acquaints us that he has found considerable efficacy in the use of that class of stimulants termed antispasmodics; particularly valerian and opium, the former in large doses. These means, he asserts, effect the cure by restoring a certain degree of order in the lacteal secretions; (Vide Medical and Physical Journal, Vol. VIII).

CHAP. XV. Of the SWELLING of the LOWER EXTREMITIES.

According to Dr. Denman's account, given in his excellent Introduction to Midwifery, this disease has been long ago mentioned by the French writers, most commonly under the name of *L'enflure des jambes et des cuisses de la femme accouchée*; or that of *dépôt du lait*, from its supposed cause; but often with so little accuracy, as to make it difficult to distinguish what kind of swelling they meant to describe. By the Germans it is usually called the *œdema lacteum*.

"The puerperal swelling of the inferior extremities does not seem to depend upon the kind of labour the patient may have had, as it indiscriminately happens after those which were easy and those which were difficult; or on any evident peculiarity of the constitution, the corpulent and the thin, the feeble and the strong, being equally liable to it; or on rank in life, as the rich and poor are alike subject to it; or on any mode of treatment in the state of childbed. Nor does any appearance during pregnancy denote a disposition to it, the swelling of the inferior extremities at that time being a totally different complaint; but the whole disease seems to arise from some circumstance that occurs after the

delivery of the patient. It is alſo remarkable, which is a ſatisfactory reply to thoſe who have attributed this ſwelling to the depoſition of the milk, that it has happened to thoſe who had an abundance, or thoſe who had a ſcarcity of milk; or thoſe who did, or thoſe who did not give ſuck; and ſometimes, though rarely, in abortions, when no milk was ſecreted.

"Before the appearance of any ſwelling, or any ſenſe of pain in the limb about to be affected, women become very irritable, and grievouſly depreſſed in their ſpirits, without any apparently ſufficient reaſon, complaining only of tranſient pains in the region of the uterus, and from theſe only the approach of the diſeaſe has frequently been foretold. After a ſhort time they are ſeized, often very ſuddenly, with an extremely acute pain in the calf of the leg, extending to the inſide of the heel, and then, obſerving the courſe of the lymphatics, ſtretching up to the ham, along the internal part of the thigh to the groin, occaſioning a ſlight ſoreneſs over the lower part of the abdomen. Then alſo the inguinal glands are affected; ſometimes the external, which are perceptibly enlarged, indurated, and painful, and ſometimes the internal, or both, and probably alſo, judging from the ſymptoms, thoſe which lie at the bifurcation of the veſſels at the loins. Except that I have not obſerved the limb to be diſcoloured, or the lymphatics inflamed, and marking their courſe by a redneſs of the ſkin (which we provincially call the anguiſh vein), the firſt effects of this diſeaſe very much reſemble thoſe which would attend the abſorption of ſome poiſonous matter from the lower part of the limb. The whole ſurface of the ſwelled limb becomes inſufferably tender to the ſlighteſt touch or preſſure, eſpecially in thoſe parts where the glands are ſeated; yet without any other apparent change, except that the ſkin is gloſſy and of a deadly paleneſs; and a certain degree of paleneſs, not unlike that of a chlorotic or dropſical perſon, is ſpread over the countenance and whole body, every vein ſeeming to be ſcantily ſupplied with blood. When the pain has continued about twenty-four hours, the limb begins to ſwell, and the pain is uſually abated in proportion to the increaſe of the ſwelling; but, from the moment of the attack, all power of acting with the limb is loſt, every attempt to move it giving great torture, and a diſpoſition to faint. There are, however, many varieties in the manner in which the diſeaſe commenceth, as well as in its degree and progreſs; but the glands and lymphatics of the limb are evidently the parts firſt and principally affected. In ſome caſes the acceſs of the diſeaſe is ſlower, and the ſymptoms leſs violent; heſitating, as it were, whether it ſhould be formed or not. In theſe the pain is not only leſs ſevere, but diffuſed over the limb, inſtead of being fixed on particular parts, and the ſwelling ſcarce ſufficient to draw attention.

"This diſeaſe happens at no preciſe time after delivery, as it

has come on at any period, from the fifth or ſixth day to the third or even fourth week, but moſt commonly, I think, between the fifth and twelfth day. Whenever it does appear, the whole conſtitution is ſpeedily and greatly affected by it. The pulſe is extremely quick, and generally feeble; the heat of the body is much increaſed, the tongue is white and clammy, and the countenance pale and dejected; the urine, which is voided in ſmall quantities, is thick and of a muddy colour, unlike what I have obſerved in any other diſeaſe, the muddineſs gradually leſſening as the diſeaſe abates; the patient is coſtive; the fæces being of a pale colour and clayey conſiſtence; and the uterine diſcharges, whatever their quantity may be, have an offenſive ſmell and unnatural appearance. It is, however, to be obſerved, that this ſmell and appearance do not always continue through the courſe of the diſeaſe, but, on enquiry, will be found to have exiſted at, or ſome days before, its commencement.

" Either or both the legs may be affected, together or ſucceſſively. When the latter is the caſe, the diſeaſe having remained for a certain time in one leg, and the ſymptoms being abated, the other has been ſuddenly and unexpectedly ſeized. Then the ſymptoms have recurred with equal violence, and gone through a ſimilar courſe. But the patient having eſcaped the danger before apprehended, though diſconcerted, bears the ſecond attack, even if it be more ſevere, better than ſhe did the firſt. Should the ſecond leg become affected, it is not by a tranſlation of the diſeaſe from one limb to the other; the leg firſt affected remaining in the ſame ſtate, and obſerving the ſame progreſs, as before the affection of the ſecond. When only one leg is affected, there are, in ſome caſes, occaſional exacerbations of the diſeaſe, after apparently conſiderable amendment; and theſe may render it neceſſary to change the order of treatment, or even to return to that which was proper at the commencement.

" After eight or ten days' continuance, according to its lenity or violence, the more urgent ſymptoms of this diſeaſe begin to abate, but in many caſes very ſlowly; the debility and oppreſſion ſometimes remaining for ſeveral weeks, as the conſtitution is naturally more inert or vigorous. Though all the other ſymptoms be removed, the ſwelling may, and generally does, remain for many weeks, or even months; and, in ſome very bad caſes, the limb has never been reduced to its primitive ſize, or recovered its wonted powers of agility and firmneſs during the patient's life.

" The conſtitution ſeems to be very much diſturbed and enfeebled at the beginning of the diſeaſe, and unequal to the due performance of its common functions, yet after a certain time it ſeems to become local; for the patients recover their health, and

often menstruate regularly; but even this change has seldom afforded the expected relief to the affected limb."

Though this disease is not usually dangerous, Dr. Denman says it often creates much alarm to the patient and her friends, and always occasions much suffering. "I do not mean," says he, "nor should I be justified in saying, that it was never attended with danger; having been informed of several cases, and seen one, which proved fatal, where no other cause of the patient's death could be assigned or suspected."

"From this description of the disease," continues the doctor, "the inguinal and neighbouring glands seem to be the parts first affected, and the subsequent swelling of the limb to be evidently occasioned by the blocking up of all passage for the lymph through those glands. The pain and extreme soreness of the limb, which are always somewhat abated when the swelling comes on, appear to be incidental, and to be produced by the distension of the lymphatic vessels; so that the swelling seems to prove that those which were before over-distended are relieved, either by the bursting of some, allowing the effusion of lymph into the cellular membrane; or a series of vessels of small dimensions are enlarged, by which those lymphatics, which before suffered from extreme distension, together with the parts on which they made compression, are eased.

"But it remains to be proved how it comes to pass, that these glands are originally affected; and this I should endeavour to explain by presuming, that, as the lymphatic vessels of the uterus and vagina are very much increased in size during pregnancy, they are more capable of absorbing any fluid which may come into contact with their orifices; and if any fluid not consonant in its qualities with that which they were by nature intended to convey, were to be admitted and conducted to the gland to which any particular lymphatic may lead, a morbid affection of the gland might be produced, which would occasion all the succeeding mischief. Whether the internal or external inguinal glands, or those at the head of the triceps, or any other, were affected, will depend on the course of the lymphatic, which had taken up the offending matter."

Dr. Denman here expresses himself satisfied, that the *absorption of vitiated matter from the uterus* is the cause of the swelling of the inguinal glands. "Further," says he, "if this absorbed matter had not been interrupted by the gland, and thus prevented from spreading over the whole body, this disease would have been infinitely more dangerous; and this opinion is strengthened, not only by the common consequences of acknowledged poisons when absorbed, but by many similar complaints frequently met with in practice; as in the swelling of the inferior extremities of men,

when the proftate gland is affected; in one or both legs, when the uterus is difeafed; in the arm, when the axillary glands are enlarged; and in many other cafes. But the changes in the uterine difcharges which precede this difeafe are not, it is apprehended, like the changes produced by the retenfion of coagula or of fmall portions of the placenta or membranes, but they are confequent to an unhealthy ftate or morbid action of the uterus.

" Having formed this opinion of the caufe of this difeafe, and reafoning by analogy of its effects, in the method of treatment, without aiming to cure the difeafe in the firft inftance, I take the fymptoms for my guide, and endeavour to relieve thefe by all the means in my power. As the fenfe of extreme weaknefs and exceffive irritability are the moft prominent and diftreffing, the patient is to be well fupported by cordial medicines, and by a liberal ufe of wine; not reftraining her to any precife quantity, but leaving her at liberty to judge what that fhall be, by the degree of depreffion which fhe feels. Opiates are alfo to be given, to abate and foothe the general irritability of the habit, and, together with thefe, fuch medicines as promote the fecretion by the fkin and kidneys."

For thefe purpofes Dr. Denman ufually gives the following medicine:

(No. 33.) ℞ Aq. ammon. acetat. ℥fs.
Syr. papaver. alb.
Spir. nuc. mof. ā ʒii.
Aq. menth. fativ.
Aq. puræ, ā ℥fs.
M. f. hauftus quarta vel fexta quaque hora fumendus.

" Should this fail," fays he, " to moderate the fufferings of the patient, a few drops of tinct. opii may be occafionally added to the draughts, efpecially to that taken at bed-time, and the quantity of ammonia acetata may be increafed, or pure ammonia may be given in fome cafes of great depreffion.

" Perhaps the beft application to the fwelled limb is a liniment compofed of one drachm of camphor diffolved in an ounce of oil of olives; or fome of the expreffed oil of mace foftened down to a proper confiftence with a fufficient quantity of oil of almonds; and to either of thefe may be added from five to ten grains of powdered opium. The moft painful parts, or the whole limb, may be gently anointed with a fmall quantity of thefe every night and morning, and afterwards covered with a loofe flannel. By fuch means fome relief is ufually obtained, though not much permanent benefit; and they are preferable, I think, either to fpirituous or to hot fomentations, which, without producing more advantage, are apt to bring on profufe fweating and great faintnefs."

Dr. Denman here expreffes his doubts as to the propriety of

resorting, in this stage of the disease, to local bleedings with leeches, and blisters to the enlarged glands, as the most effectual means of speedily curing the disease by removing the glandular obstruction. If his opinion of the cause of the disease be just, the hasty dispersion of the swelling of the glands, if it could be effected, would ultimately prove a very great disadvantage, by allowing the absorbed virus to escape; and this pervading the whole body, a disease primarily local would become a general one of the most dangerous kind.

"With regard to the state of the bowels," says the doctor, "though we are to be circumspect in preventing the inconveniences of constipation, it is never advisable to purge in this stage of the disease. Their regular course may be obtained by the occasional use of magnesia vitriolata, or any other medicine of the kind, which will answer the purpose, and is least likely to disturb the stomach. Clysters are not eligible, because the change of position which they require is often extremely difficult and painful.

"The great tumult raised on the first attrack of the disease being appeased, the quantity of wine and opiates may be lessened, or they may be less frequently given; but in this we are to be guided by the degree of debility and irritation that remains. As a preventive also, when the disease is threatened, a generous diet and wine are to be allowed, if the appetite of the patient will allow her to take nourishment.

"When the constitution is, according to the old mode of expression, fortified, and the health somewhat restored, the swelling of the leg is to be considered rather as of a chronic than of an acute kind, and all reasonable endeavours may be used to disperse it. I have then given the decoctum cinchonæ or cascarillæ, with a saline draught, or the kali vitriolatum, or magnesia vitriolata, or a strong infusion of burnt sponge, two or three times a-day, and every night at bed-time half a grain or a grain of calomel, with or without an opiate. In some cases I have thought it more eligible to give from three to five grains of calomel twice a-week, with a purging draught on the following morning, and some of the draughts before mentioned on the intermediate days. In other cases the crystals of tartar have been liberally given in any convenient form; or the cicuta with a decoction of sarsa, and various other things usually advised on similar occasions: and whenever there was much remaining weakness, some preparation of iron, as the ferrum vitriolatum or ammoniacale in suitable doses, has been of much service.

"Then also it is necessary to support the swelled limb by a slight flannel bandage drawn gradually tighter, and to use different applications, such as the volatile liniment, or one composed of three parts of linimentum saponis and one part of tinctura cantharidum, and sometimes small quantities of the unguentum hy-

drargyri. The frequent application of small bliſters to different parts of the limb has been then ſtrongly adviſed, and in many caſes with evident advantage. Electricity has been tried, but of its real benefits I am not competent to judge. Certainly many patients have been much relieved by perſevering in the uſe of warm ſea-bathing; and they are to be encouraged, but with ſome caution, to uſe exerciſe, otherwiſe the deſuetude will endanger their being crippled. It may laſtly be obſerved, though ſome women have been afflicted with this ſwelling of one or other of the inferior extremities in ſeveral ſucceſſive labours, in general they who have had it in one labour are not more liable to it in ſubſequent ones, and are ſometimes relieved during their confinement from the conſequences of a former attack."

CHAP. XVI. Of the EVACUATIONS necessary at the end of the MONTH after DELIVERY.

Those who have had a ſufficient diſcharge of the lochia, plenty of milk, and ſuckle their own children, commonly recover with eaſe, and, as the ſuperfluous fluids of the body are drained off at the nipples, ſeldom require evacuations at the end of the month; but if there are any complaints from fulneſs, ſuch as pains and ſtitches, after the twentieth day, ſome blood ought to be taken from the arm, and the belly gently opened by frequent clyſters, or repeated doſes of laxative medicines.

If the patient has tolerably recovered, the milk having been at firſt ſucked or diſcharged from the nipples, and afterwards diſcuſſed, no evacuations are neceſſary before the third or fourth week; and ſometimes not till after the firſt flowing of the menſes, which commonly happens about the fifth week; if they do not appear within that time, gentle evacuations muſt be preſcribed, to carry off the plethora, and bring down the catamenia; but in women of weakly conſtitutions theſe methods may be diſpenſed with.

EXPLANATION of PLATES.

Plate VII. fig. 1. repreſents a well-formed pelvis.

AAAA, The *oſſa ilia*, properly ſo called. *a a*, The iliac foſſæ. *b b b b*, The angle which divides tranſverſely and obliquely, from behind forward, the internal face of the os ilium into two parts, making part of the brim of the pelvis. *c c c c*, The criſtæ of the oſſa ilia. *e e*, Their anterior ſuperior ſpines. *f f*, The angle formed by the internal lip of the criſta of the os ilium, to which is attached a ligament inſerted at the other end in the tranſverſe apophyſis of the laſt lumbar vertebra. *g g*, The inferior angle of the os ilium, which makes part of the acetabulum.

BB, The os ifchium. *h h*, Its tuberofities. *i i*, Its branches. *k k*, Its pofterior part, making part of the acetabulum.

CC, The body of the os pubis. *l l*, Its angle. *m m*, Its pofterior extremity, making part of the acetabulum. *n n*, Its defcending branch, uniting with that of the ifchium.

DDD, The os facrum. 1, 2, 3, 4, The anterior holes. *o o o o*, Its bafe. *p p*, The fides. *q*, The point. E, The coccyx. F, The laft lumbar vetebra. *r r*, The tranfverfe apophyfis of that vertebra. *s s*, The ligament proceeding from the tranfverfe apophyfis of the laft vertebra to the angle of the internal lip of the crifta of the os ilium, marked *f f*. *t t*, Another ligament which defcends from the fame apophyfis to the fuperior edge of the facro-iliac fymphyfis.

GG, The femur or thigh-bone. VV, Its head received in the acetabulum. *u u*, The foramina ovalia.

H, The fymphyfis of the offa pubis. II, The facro-iliac fymphyfis. K, The facro-vertebral fymphyfis.

Fig. 2. reprefents the fuperior ftrait of a well-formed pelvis.

a a, The iliac foffæ. *b*, The facro-vertebral angle, or projection of the facrum. *c*, The laft lumbar vertebræ. *d d*, The lateral parts of the bafe of the facrum. *e e*, The facro-iliac fymphyfes. *f f*, The parts over the acetabula. *g*, The fymphyfis of the pubes.

The lines denote the different diameters of the fuperior ftrait. AB, The little diameter. CD, The tranfverfe or great diameter. EF, GH, The oblique diameter, extending from the left acetabulum to the right facre-iliac junction.

Fig. 3. fhows the inferior ftrait of a well-formed pelvis.

a a, The external faces of the offa ilia. *b b*, Their anterior fuperior fpines. *c c*, Their anterior inferior fpines. *d d*, The acetabula. *e e*, The foramina ovalia, with the obturator ligaments. *f f*, The ifchiatic tuberofities. *g g*, The offa pubis. *h h*, The branches of the os pubis and ifchium united. *i i*, The facrum. *k*, The coccyx. *l l*, The facro-ifchiatic ligaments. *m*, The fymphyfis of the pubes. *n*, Its arch.

The diameters of the inferior ftrait are marked by the lines. AA, The *antero-pofterior*, or great diameter. BB, The tranfverfe or little diameter. CC, DD, The oblique diameters.

Fig. 4. fhews a deformed pelvis.

a a, The offa ilia. *b b*, The offa pubis. *c c*, The offa ifchia. *d d d*, The laft lumbar vertebræ. *e*, The projection of the facrum. *f f*, The facro-iliac fymphyfes. *g*, The fymphyfis of the pubes. *h h*, The foramina ovalia. *i i*, The branches of the offa pubis and ifchia, which form the anterior arch of the pelvis. *k k*, The acetabula.

AA, The *entero-pofterior* diameter; the natural length being fourteen or fifteen lines. BB, The tranfverfe diameter; the na-

tural length four inches and ten lines. CC, The diſtance from the projection of the ſacrum to that point of the margin which anſwers to the left acetabulum, being thirteen lines. DD, The diſtance from the ſame point of the ſacrum to that of the margin which anſwers to the right acetabulum, twenty lines.

Fig. 5. ſhews a vertical ſection of the pelvis.

A,A,A,A, The four laſt lumbar vertebræ. B,B,B, The os ſacrum. CC, The coccyx. *d d*, The ſurface reſulting from the ſection of the ſymphyſis of the pubes. E, The left iliac foſſa. F, The left ſide of the ſuperior ſtrait. G, The ſacro-iſchiatic ligament. H, The tuberoſity of the iſchium.

i i, The entrance of the vagina. K, one of the labia pudendi. L, The anus. M, The mons veneris. N, The left natis.

Plate VIII. fig. 10. gives a front view of the uterus *in ſitu*, ſuſpended in the vagina; the anterior parts of the oſſa iſchium, with the oſſa pubis, pudenda, perinæum, and anus, being removed, in order to ſhow the internal parts.

A, the laſt vertebra of the loins. BB, the oſſa ilium. CC, the acetabula. DD, the inferior and poſterior parts of the oſſa iſchium. E, the part covering the extremity of the coccyx. F, the inferior part of the rectum. GG, the vagina cut open longitudinally, and ſtretched on each ſide of the collum uteri, to ſhew in what manner the uterus is ſuſpended in the ſame.

HH, part of the veſica urinaria ſtretched on each ſide of the vagina, and inferior part of the fundus uteri.

I, the collum uteri. K, the fundus uteri. LL, the tubi Fallopiani and fimbriæ. MM, the ovaria. NN, the ligamenta lata and rotunda. OO, the ſuperior part of the rectum.

Fig. 11. gives a front view of the uterus in the beginning of the firſt month of pregnancy; the anterior part being removed that the embryo might appear through the amnios, the chorion being diſſected off.

A, the fundus uteri. B, the collum uteri, with a view of the rugous canal that leads to the cavity of the fundus. C, the os uteri.

Fig. 12. In the ſame view and ſection of the parts as in fig. 10. ſhews the uterus as it appears in the ſecond or third month of pregnancy.

F, the anus. G, the vagina, with its plicæ.

HH, the poſterior and inferior part of the urinary bladder extended on each ſide; the anterior and ſuperior part being removed.

II, the mouth and neck of the womb, as raiſed up when examining the ſame by the touch, with one of the fingers in the vagina.

KK, the uterus as ſtretched in the ſecond or third month, containing the embryo, with the placenta adhering to the fundus.

Fig. 13. In the ſame view and ſection of the parts with the former figures, repreſents the uterus in the eighth or ninth month of pregnancy.

A, the uterus as ſtretched nearly to its full extent, with the waters, and containing the fœtus entangled in the funis, the head preſenting at the upper part of the pelvis.

BB, the ſuperior part of the oſſa ilium. CC, the acetabula. DD, the remaining poſterior parts of the oſſa iſchium. E, the coccyx. F, the inferior part of the rectum GGG, the vagina ſtretched on each ſide. H, the os uteri, the neck being ſtretched to its full extent, or entirely obliterated. II, part of the veſica urinaria. KK, the placenta, at the ſuperior and poſterior part of the uterus. LL, the membranes. M, the funis umbilicalis.

Fig. 14. gives a front view of twins *in utero* in the beginning of labour.

A, the uterus as ſtretched, with the membranes and waters. BB, the ſuperior parts of the oſſa ilium. CC, the acetabula. DD, the oſſa iſchium. E, the coccyx. F, the lower part of the rectum. GG, the vagina.

H, the os internum ſtretched open about a finger-breadth, with the membranes and waters, in time of labour pains.

II, the inferior part of the uterus, ſtretched with the waters which are below the head of the child that preſents.

KK, the two placentas adhering to the poſterior part of the uterus, the two fœtuſes lying before them, one with its head in a proper poſition at the inferior part of the uterus, and the other ſituated preternaturally with the head to the fundus; the bodies of each are here entangled in their proper funis, which frequently happens in the natural as well as preternatural poſitions.

LLL, the membranes belonging to each placenta:

Fig. 15. ſhews, in a lateral view and longitudinal diviſion of the parts, the gravid uterus when labour is ſomewhat advanced

A, the loweſt vertebra of the back; the diſtance from which to the laſt-mentioned vertebra is here ſhewn by dotted lines. CC, the uſual thickneſs and figure of the uterus when extended by the waters at the latter end of pregnancy. D, the ſame contracted and grown thicker after the waters are evacuated. EE, the figure of the uterus when pendulous. FF, the figure of the uterus when ſtretched higher than uſual, which generally occaſions vomitings and difficulty of breathing. G, the os pubis of the left ſide. HH, the os internum. I, the vagina. K, the left nympha. L, the labium pudendi of the ſame ſide. M, the remaining portion of the bladder. N, the anus. OP, the left hip and thigh.

Fig. ſhews the forehead of the fœtus turned backwards to

the os ſacrum, and the occiput below the pubes, by which means the narrow part of the head is to the narrow part of the pelvis, that is, between the inferior parts of the oſſa iſchium.

A, the uterus contracted cloſely to the fœtus after the waters are evacuated. BCD, the vertebræ of the loins, os ſacrum, and coccyx. E, the anus. F, the left hip. G, the perinæum. H, the os externum beginning to dilate. I, the os pubis of the left ſide. K, the remaining portion of the bladder. L, the poſterior part of the os uteri.

Plate IX. fig. 17. is principally intended to ſhew in what manner the perinæum and external parts are ſtretched by the head of the fœtus, in a firſt pregnancy, towards the end of the labour.

A, the abdomen. B, the labia pudendi. C, the clitoris and its preputium. D, the hairy ſcalp of the fœtus, ſwelled at the vertex, in a laborious caſe, and protruded to the os externum. E, F, the perinæum and anus puſhed out by the head of the fœtus in form of a large tumor. GG, the parts that cover the tuberoſities of the oſſa iſchium. H, the part that covers the os coccygis.

Fig. 18. ſhews in what manner the head of the fœtus is helped along with the forceps, as artificial hands, when it is neceſſary for the ſafety of either mother or child.

AABC, the vertebræ of the loins, os ſacrum, and coccyx. D, the os pubis of the left ſide. E, the remaining part of the bladder. FF, the inteſtinum rectum. GGG, the uterus. H, the mons veneris. I, the clitoris, with the left nympha. X, the corpus cavernoſum clitoridis. V, the meatus urinarius. K, the left labium pudendi. L, the anus. N, the perinæum. QP, the left hip and thigh. R, the ſkin and muſcular parts of the loins.

Fig. 19. ſhews the head of the fœtus, by ſtrong labour-pains, ſqueezed into a longiſh form, with a tumor on the vertex, from a long compreſſion of the head in the pelvis.

K, the tumor on the vertex. L, the forceps. M, the veſica urinaria much diſtended with a large quantity of urine from the long preſſure of the head againſt the urethra. N, the under part of the uterus. OO, the os uteri.

Fig. 20. ſhews, in the lateral view, the face of the child preſenting and forced down into the lower part of the pelvis, the chin being below the pubes, and the vertex in the concavity of the os ſacrum: the water being likewiſe all diſcharged, the uterus appears cloſely joined to the body of the child.

Fig. 21. ſhews, in a lateral view, the head of the child in the ſame poſition as in the former figure.

AB, the vertebræ of the loins, or ſacrum, and coccyx. C, the os pubis of the left ſide. D, the inferior part of the rectum. E, the perinæum. F, the left labium pudendi. GGG, the uterus.

Fig. 22. gives a lateral internal view of a diſtorted pelvis, divided longitudinally, with the head of a fœtus of the ſeventh month paſſing the ſame.

ABC, the os ſacrum and coccyx. D, the os pubis of the left ſide. E, the tuberoſity of the os iſchium of the ſame ſide.

Fig. 23. gives a ſide view of a diſtorted pelvis, divided longitudinally, with the head of a full-grown fœtus ſqueezed into the brim, the parietal bones decuſſating each other, and compreſſed into a conical form.

ABC, the os ſacrum and coccyx. D, the os pubis of the left ſide. E, the tuberoſity of the os iſchium. F, the proceſſus acutus. G, the foramen magnum.

Fig. 24. ſhews, in a front view of the pelvis, the breech of the fœtus preſenting, and dilating the os internum, the membranes being too ſoon broken.

Fig. 25. is the reverſe of the former, the fore parts of the child being to the fore part of the uterus.

Fig. 26. repreſents, in a front view of the pelvis, the fœtus compreſſed, by the contraction of the uterus, into a round form, the fore parts of the former being towards the inferior part of the latter, and one foot and hand fallen down into the vagina. In this figure, the anterior part of the pelvis is removed, by a longitudinal ſection through the middle of the foramen magnum.

AA, the ſuperior parts of the oſſa ilium. BB, the uterus. C, the mouth of the womb ſtretched and appearing in OOOO, the vagina. D, the inferior and poſterior part of the os externum. EEEE, the remaining part of the oſſa pubis and iſchium. FFFF, the membrana adipoſa.

Fig. 26. repreſents, in the ſame view with fig. 27. the fœtus in the contrary poſition; the breech and fore parts being towards the fundus uteri, the left arm in the vagina, and the fore-arm without the os externum, the ſhoulder being likewiſe forced into the os uteri.

Plate VII. fig. 8. ſhews a deformed pelvis, of which the ſmall diameter of the ſuperior ſtrait is only two inches ſeven lines. The figure is triple: F. I. ſhews it in its natural ſtate; F. II. the oſſa pubis ſeparated 18 lines, and F. III. with a ſeparation of two inches and a half, in order to ſhew the quantity of amplification which the ſection of the ſymphyſis in ſuch a pelvis can produce.

F. I. *a a*, the two laſt lumbar vertebræ; *b b b b*, the tranſverſe apophyſes of theſe vertebræ; *c c*, ligaments proceeding from the tranſverſe apophyſes of the laſt of theſe vertebræ to the middle and poſterior part of the internal lip of the criſta of the os ilium; *d d*, other ligaments deſcending from the ſame apophyſes to the ſuperior part of the ſacro-iliac ſymphyſes; *e*, the projection of the ſacrum; *f f*, the lateral parts of the baſe of the ſacrum; *g g*,

part of the oſſa ilia: the reſt of thoſe bones being concealed by F. II. and III.

h h, The bodies of the oſſa pubis; *i i*, their angles.

k k, The oſſa iſchia; *l l*, the branches of theſe bones, and of the pubes.

m, The arch of the oſſa pubis at the fore part of the pelvis.

n n, The foramina ovalia concealed by the oſſa pubis of F. II. and III.

A, The ſymphyſis of the oſſa pubis ſeen perſpectively. B B, the ſacro-iliac ſymphyſes.

F. II. *o o*, Part of the oſſa ilia.

PP, The bodies of the oſſa pubis; *q q*, their angles; *r r*, their articular facettes ſeen perſpectively; *ſ ſ*, very ſmall portions of the branches of the oſſa pubis.

s s, The oſſa iſchia appearing behind the foramina ovalia of nº III; *t t*, articular facettes of the oſſa ilia, correſponding to ſimilar ones obſerved at the ſides of the ſacrum.

F. III. *u u*, The oſſa ilia; *v v*, their criſtæ; *x x*, the angle formed by the internal-lip of the criſta in the middle and poſterior part of its length; *y y*, the anterior and ſuperior ſpines of the oſſa ilia; z z, the anterior ſpines of theſe bones; & &, articular facettes of the oſſa ilia, making part of the ſacro-iliac ſymphyſes.

1 1, The oſſa pubis; 2 2, their angles; 3 3, their articular facettes ſeen perſpectively.

4 4. The oſſa iſchia; 5 5, the united branches of the oſſa iſchia and pubis; 6 6, the acetabula.

The lines indicate the natural ſize of the pelvis in the different directions in which they are traced; and their dotted extremities, the amplification which the ſuperior ſtrait acquires in thoſe ſame directions at a ſeparation of eighteen lines, and of thirty lines between the oſſa pubis. Line I. Antero-poſterior diameter of the ſuperior ſtrait, or the diſtance from the pubes to the projection of the ſacrum; two inches ſeven lines. Line II. Tranſverſe diameter of the ſuperior ſtrait, in its moſt extenſive part; four inches ſeven lines. Line III. Oblique diameter of the ſuperior ſtrait, which extends from that point of the ſtrait which correſponds with the anterior edge of the left acetabulum, to the right ſacro iliac junction; three inches eleven lines. Line IV. The other oblique diameter, which extends from that point of the ſtrait which anſwers to the anterior edge of the right acetabulum, to the left ſacro-iliac ſymphyſis; four inches.

By giving the ſmalleſt attention to the relation of theſe dimenſions to thoſe which the head of a fœtus of the uſual ſize preſents in their direction in time of labour, we ſhall ſee that they are very favourable; except the firſt, which is, ſtrictly ſpeaking, eleven lines too ſhort, being only thirty-one lines in extent: whereas the tranſverſe diameter of the head is commonly forty-

two. It is only in this latter direction, and to the extent of eleven lines, that it would be neceſſary to augment the capacity of ſuch a pelvis, to favour delivery. As the greater part of thoſe who have performed the Sigaultian operation have only obtained a ſeparation of eighteen lines or thereabouts between the oſſa pubis, it is fixed at that degree in the ſecond figure.

By ſuch a ſeparation in a pelvis perfectly ſimilar to that here repreſented, the angle of each os pubis recedes from the centre of the projection of the ſacrum three lines, or very near, beyond their natural diſtance from it. (See the lines V, and VI.) The antero-poſterior diameter receives but the ſame increaſe, if we conſider it as lengthened to the middle of the dotted line IX, IX, which marks the depth at which it may be preſumed the lateral convexity of the head engages. Both the oblique diameters augment five lines before, and about two lines and a half backward; and the tranſverſe diameter ſeven lines, or very nearly.

It is evident, that a ſeparation of eighteen lines on ſuch a pelvis cannot remove the diſproportion which exiſts between the ſmall diameter of the ſuperior ſtrait and the ſmall diameter of the child's head; ſince the former augments only three lines, conſidered in the moſt favourable point of view. The amplification which the other diameters receive from a ſimilar ſeparation, is abſolutely uſeleſs; thoſe diameters being naturally large enough.

Suppoſing that the oſſa pubis recede in an equal degree, in ſeparating two inches and a half, the angle of each of them will remove from the centre of the projection of the ſacrum only ſix lines further than the diſtance they were from it before; which alſo gives an increaſe of but ſix lines between theſe two points. (See the lines VII, and VIII.) The ſmall diameter of the entrance of the pelvis does not gain much more, conſidering it to the middle of the dotted line XX, which marks the bounds beyond which the convexity of the head could not engage between the oſſa pubis, even if the pelvis were diveſted of all its ſoft parts: which does not happen in the ſection of the pubes, for the neck of the bladder, the canal of the urethra, their cellular tiſſue, the anterior ſemicircle of the orifice of the uterus, and the anterior part of the vagina, preſent at the opening and before the child's head. At this degree of ſeparation, the tranſverſe diameter augments about thirteen lines, and each oblique diameter nearly fourteen lines: a ſuperfluous increaſe, ſince thoſe diameters, in the pelvis repreſented, have all the length requiſite for delivery.

The poſterior extremities of the oblique diameters, which are dotted and marked with the figures XI and XII, ſhew the ſeparation which is to be feared in the ſacro-iliac ſymphyſes, by ſeparating the oſſa pubis two inches and a half. It was at that degree that Mr. Baudeloque obſerved they were open in moſt of

his experiments; ſince he could eaſily put the end of his finger, and even of his thumb, into them.

Admitting that the convexity of one of the ſides of the child's head may let itſelf in between the oſſa pubis ſeparated to two inches and a half, as far as the dotted line XX, traced on that very convexity, it is evident that that ſeparation cannot procure the relation of dimenſions neceſſary for an eaſy delivery, when the pelvis has originally but two inches ſix or ſeven lines in the ſmall diameter: whence it follows that the ſection of the pubes, ſuppoſing that we could obtain a ſeparation of two inches and a half in the living woman without expoſing her to diſagreeable accidents, would not anſwer in the caſe of a pelvis ſimilar to that repreſented in this plate.

Fig. 9. ſhews a pelvis with only fourteen or fifteen lines in the ſmall-diameter of its entrance, and four inches ten lines in the largeſt. The figure is triple like the former. F. I. repreſents it in its natural ſituation; F. II. with the oſſa pubis ſeparated two inches and a half; and F. III. with a ſeparation of three inches. M. le Roy ſays, that he conſtantly obtained thoſe two degrees of ſeparation without any inconvenience.

F. I. *a a a*, The three laſt lumbar vertebræ. *b*, The projection formed by the laſt of thoſe vertebræ, with the baſe of the ſacrum. *c c*, The ſides of the baſe of the ſacrum. *d d d*, The tranſverſe apophyſes of the right ſide of the above-mentioned vertebræ. *e e*, A ligament extending from the firſt of thoſe apophyſes to the angle made by the internal lip of the criſta of the os ilium towards its middle and poſterior part. *f f*, Another ligament which depends from that apophyſis to the ſuperior part of the ſacro-iliac ſymphyſis. *g g g g*, Part of the os ilium. *h h*, The bodies of the oſſa pubis: *i i*, their angles. *k k*, The oſſa iſchia. *l l*, The branches of the oſſa iſchia and pubis. *m*, The arch of the oſſa pubis. *n n*, The foramina ovalia. A, the ſymphyſis of the oſſa pubis. BB, The ſacro-iliac ſymphyſes. F. II. *o o o o*, Part of the oſſa ilia. *ſ ſ*, The articular facettes of the oſſa ilia, making part of the ſacro-iliac ſymphyſes. *p p*, The bodies of the oſſa pubis. *q q*, The angles of the oſſa pubis ſeparated two inches and a half. *r r*, The cartilaginous facettes of the oſſa pubis ſeen perſpectively. *s s*, The branches of the oſſa iſchia and pubes.

F. III. *t t*, The oſſa ilia: *u u*, their criſtæ: *v v*, their anterior ſuperior ſpines: *u x*, their anterior inferior ſpines.

y y, The anterior inferior ſpines of the oſſa ilia of F. II. *z. z.*, Their anterior articular facettes, making part of the ſacro-iliac ſymphyſes.

& &, The bodies of the oſſa pubis: 1 1, their angles. 2 2, The articular facette of each os pubis ſeen perſpectively. 3 3, The united branches of the oſſa pubis and iſchia ſeen perſpectively.

4 4, The offa ifchia. 5 5, The foramina ovalia, behind which is feen part of the offa ifchia of F. II. 6 6, The acetabula.

The lines indicate the length of the different diameters of the fuperior ftrait, in the direction in which they are traced; and their dotted extremities, the amplification to be expected from a feparation of two inches and a half, and of three inches.

Line I, The antero-pofterior, or fmall diameter of the fuperior ftrait; one inch two or three lines. Line II, The tranfverfe diameter of the fame ftrait: this line, which is four inches ten lines in extent, paffes under the projection of the facrum. Line III, The diftance from the middle and left lateral part of the projection of the facrum, to that point of the margin of the pelvis which anfwers to the anterior edge of the acetabulum on the fame fide; one inch. Line IV, The diftance from the middle and right lateral part of the projection of the facrum, to that point of the margin which anfwers to the anterior edge of the acetabulum on the fame fide; one inch eight lines.

The relation of thefe dimenfions to thofe of a child's head of the ufual fize is fuch, that the fmall diameter of the latter, fuppofed always to be three inches and a half, furpaffes the fmall diameter of the entrance of fuch a pelvis by twenty-feven or twenty-eight lines. This pelvis would be large enough in the direction of the line II, II.

By feparating the offa pubis two inches and a half, we augment the breadth of the entrance of the pelvis about three quarters of an inch in the direction of the line II, II: as much, or nearly, in the direction of the line III, and only fix lines in that of the line IV. The angle of each os pubis marked by the letter *q*, recedes from the centre of the projection of the facrum, nine or ten lines beyond what it was diftant from it before the feparation of the bones: the entrance of the pelvis increafes as much in the direction of the line V, and only half an inch in the courfe of the line VI. The fmall diameter, or the line I, continued to the middle of the dotted line IX, IX, which fhews the depth to which the child's head may be let in between the offa pubis feparated two inches and a half, if the pelvis were divefted of all its foft parts: this diameter will then be augmented only feven lines; whence we fee that it would ftill be an inch and a half, at leaft, fhorter than the fmall diameter of the head of a child of the ufual fize.

The fection of the pubes would, therefore, be fruitlefs on fuch a pelvis, if it could only procure a feparation of two inches and a half; which feems a very exorbitant one. With more reafon would it be unfuccefsful, if we could feparate the offa pubis only eighteen lines, as has moft frequently happened; fince it could not procure the proportion neceffary for delivery,

even if we could turn that ſeparation entirely to the advantage of the ſmall diameter of the ſuperior ſtrait.

Let us ſee if a ſeparation of three inches could procure that proportion.

By ſeparating the oſſa pubis three inches, we augment the breadth of the pelvis twelve or thirteen lines in the direction of the line II, II; ten lines at moſt in the courſe of the line III; only ſeven in the line IV; about an inch in the line V; and only ſeven lines in the direction of the line VI: the angle of each os pubis recedes an inch farther from the projection of the ſacrum, than the diſtance it was at before the ſeparation of the bones; which augments the opening of the pelvis to the amount of an inch, or thereabouts, in the direction of the line VII, and only half an inch in the line VIII. The antero-poſterior diameter of the entrance of this pelvis, conſidered as far as the middle of the dotted line X, X, which ſhews the greateſt depth to which the child's head could be let in between the oſſa pubis, ſeparated three inches, if the pelvis were diveſted of the ſoft parts, increaſes but ten lines or thereabouts; which cannot remove the diſproportion that exiſted before the ſection of the pubes, between that diameter and the thickneſs of the child's head which muſt paſs in that direction. From whence we ought to conclude, that this ſeparation alſo would have no ſucceſs, if the pelvis were as much deformed as that deſigned.

The dotted lines XI and XII, ſhew the ſeparation to be feared in the ſacro-iliac ſymphyſes, by ſeparating the oſſa pubis three inches.

The two other dotted lines, marked by the characters IX, IX, and X, X, ſhew how far the child's head may be let in between the oſſa pubis ſeparated to the two degrees ſtated: they were traced on the convexity of a real head applied behind the oſſa pubis in a pelvis ſtripped of its ſoft parts.

Plate X. fig. 29. ſhews a well-formed pelvis, the anterior part of which is taken away, to ſhew one of the tranſverſe poſitions of the face of the child, and explain more fully the mechaniſm of that kind of labour.

a a, Part of the iliac foſſa. *b b*, Part of the criſtæ of the oſſa ilia. *c c*, Their anterior ſuperior ſpines.

d, *d*, The iſchiatic tuberoſities. *e*, *e*, The acetabula. *f*, *f*, The thickneſs of the oſſa iſchia ſawn through vertically before their tuberoſities.

g, *g*, The bodies of the oſſa pubis ſawn through before the acetabula.

h, *h*, *h*, A circle, repreſenting a vertical ſection of the uterus, the anterior part of which is taken away in order to ſhew the child. *i*, The child's chin. *k*, The poſterior extremity of the

head. *l, l, l,* The lever applied along the crown of the head, the extremity of it extending beyond the poſterior fontanella.

m, The left lateral, and inferior part of the pelvis. *n,* A portion of the right lateral part of the uterine cavity. *o,* The left hand. *p, q,* The fore and middle fingers, placed at the ſides of the noſe, and preſſing againſt the upper jaw. R, The right hand graſping the extremity of the lever.

Plate X. fig. 30. ſhews the ſame vertical ſection of a pelvis as the laſt; with the child's body entirely diſengaged from it. The head graſped by the forceps is retained at the ſuperior ſtrait, with the occiput over the pubes, and the lower part of the forehead againſt the projection of the ſacrum.

a, a, The laſt lumbar vertebræ. *d, d,* The canal of theſe vertebræ, and of the ſacrum. *g, g, g, g,* Spiny tubercles of the vertebræ above mentioned. *b, b, b, b,* The falſe vertebræ of the ſacrum. *c, c, c,* The coccyx. *e, e,* The flatted portion of the anterior face of the ſacrum.

f, The left ſacro-iſchiatic ligament. *h,* The cartilaginous and ligamentous facette of the left os pubis, making part of the ſymphyſis.

i, The mons veneris. *k, k, k, k,* A circle repreſenting the ſection of the uterus, the right ſide of which is taken away to ſhew the head and the inſtrument. *l, l,* A portion of the placenta attached to the ſuperior and anterior part of the uterus.

m, m, m, The female branch of the forceps applied on the left ſide of the head, which anſwers to the right ſide of the pelvis. *n, n,* The male branch of the forceps, applied at the left ſide of the pelvis, and the right ſide of the head. *o,* Part of the left ſmall ſacro-iſchiatic ligament. P, Part of the left os ilium, the reſt being concealed by the head.

q, The point to which we ought to bring the lower extremity of the forceps, in bringing the head down into the cavity of the pelvis.

R, The point of elevation at which the extremity of the forceps muſt be held, when the head occupies the bottom of the pelvis, after having replaced the face underneath.

Fig. 31, ſhews alſo the vertical ſection of a pelvis; but is ſuppoſed to have only three inches ſix lines in the ſmall diameter of its entrance. The baſe of the cranium is engaged in it in a tranſverſe direction, the occiput being turned towards the left ſide, and the face to the right ſide; ſo that the greateſt thickneſs of the head is ſtill above the ſtrait.

a, a, The two laſt lumbar vertebræ. *b, b, b, b, b,* The five falſe vertebræ of the ſacrum. *c, c, c,* The three pieces of the coccyx. *d, d,* The canal of the aforeſaid vertebræ. *e, e, e, e,* Their ſpinous apophyſes. *f, f,* Part of the anterior face of the ſacrum.

g, The left ſacro-iſchiatic ligament. *h,* The cartilaginous and

ligamentous facette of the left os pubis, making part of the symphysis. *i*, The mons veneris.

k, k, k, k, A circle indicating the section of the uterus in the same direction as that of the pelvis. *l, l*, A portion of the placenta attached to the fundus of the uterus.

m, m, m, The female branch of the forceps, applied on the left side of the child's head, and under the symphysis of the pubes. *n, n, n*, The female branch of the forceps applied on the right side of the head, and before the sacrum. *o*, A dotted line, in the direction of which the instrument must be pulled to bring down the head into the pelvis. *p*, The point of elevation at which the forceps must be held when the head is brought down to the bottom of the pelvis, after having turned the face into the curve of the os sacrum.

Plate VII. fig. 6. shews M. Baudelocque's calipers for measuring the antero-posterior diameter of the superior strait.

a, a, The branches of the calipers. B, The hinge which unites the two branches. *c, c*, Lenticular buttons which terminate the branches. *d*, A graduated scale nine inches long, intended to demonstrate the thickness of the body comprised between the two branches. This scale is contained in a deep groove cut lengthwise in the branch of the calipers, from the letter *e* to the hinge B; and passes through a mortise made in the other branch under the letter *f*. *e*, The place where the scale is united by a kind of hinge. *f*, A little screw with a flat head, designed to fix the scale, while we calculate the thickness of the body comprised between the two branches.

Fig. 7. shews the pelvimeter of M. Coutonli developed in the pelvis.

A, A, The first branch; whose square, B, is applied to the projection of the os sacrum. C, *c*, A kind of hooks intended to keep the first branch in its place, while we introduce and develope the second. This has a dove-tailed groove, in which the body of the second branch is lodged and moved. *d, d*, the second branch of the instrument, whose square *e* is placed against the symphysis of the pubes. F, a scale four inches long, graduated in the branch *d, d*; and intended to shew the degree of opening from the pubes to the sacrum.

Fig. 21. represents, in a lateral view of the pelvis, the method of extracting, by means of a curved crotchet, the head of the fœtus, when left in the uterus, after the body is delivered and separated from it; either by its being too large, or the pelvis too narrow.

ABC, the os sacrum and coccyx.

D, the os pubis of the left side.

EE, the uterus.

F, the locking part of the crotchet.

g, *h*, *i*, The point of the crotchet on the inſide of the cranium. In plate XI. fig. 32. repreſents the forceps and blunt-hook.

A, the ſtraight forceps, in the exact proportion as to the width between the blades, and length from the points to the locking part; the firſt being two and the ſecond ſix inches, which, with three inches and a half (the length of the handles), make in all eleven inches and a half.

B repreſents the poſterior part of a ſingle blade, in order to ſhew the width and length of the open part of the ſame, and the form and dimenſions of the whole.

C, the blunt-hook, which is uſed for three purpoſes: 1. To aſſiſt the extraction of the head, after the cranium is opened with the ſciſſars, by introducing the ſmall end along the ear on the outſide of the head to above the under-jaw, where the point is to be fixed; the other extremity of the hook being held with one hand, whilſt two fingers of the other are to be introduced into the foreſaid opening, by which hold the head is to be gradually extracted. 2. The ſmall end is uſeful in abortion, in any of the firſt four or five months, to hook down the ſecundines, when lying looſe in the uterus, when they cannot be extracted by the fingers or labour pains, and when the patient is much weakened by floodings. 3. The large hook at the other end is uſeful to aſſiſt the extraction of the body when the breech preſents; but ſhould be uſed with great caution, to avoid the diſlocation or fracture of the thigh.

Fig. 33. A, repreſents the whalebone fillet, which may be ſometimes uſeful in laborious caſes, when the operator is not provided with the forceps, in ſudden and unexpected exigencies.

BB, two views of a peſſary for the prolapſus uteri. After the uterus is reduced, the large end of the peſſary is to be introduced into the vagina, and the os uteri retained in the concave part, where there are three holes to prevent the ſtagnation of any moiſture. The ſmall end without the os externum has two tapes drawn through the two holes, which are tied to four other tapes, that hang down from a belt that ſurrounds the woman's body, and by this means keep up the peſſary. This peſſary may be taken out by the patient when ſhe goes to bed, and introduced again in the morning; but as this ſometimes rubs the os externum, ſo as to make its uſe uneaſy, the round kind, marked C, are of more general uſe. They are made of wood, ivory, or cork (the laſt covered with cloth and dipped in wax): the peſſary is to be lubricated with pomatum, the edge forced through the paſſage into the vagina, and a finger introduced in the hole in the middle lays it acroſs within the os externum. They ought to be larger or ſmaller, according to the wideneſs or narrowneſs of the paſſage, to prevent their being forced out by any extraordinary ſtraining.

DD gives two views of a female catheter, to ſhew its degree of curvature and different parts.

Fig. 34, *a*, repreſents a pair of curved crotchets locked together in the ſame manner as the forceps. The dotted lines along the inſide of one of the blades repreſent a ſheath contrived to guard the point till it is introduced high enough: the ligature at the handles, marked with two dotted lines, is then to be untied, the ſheath withdrawn, and the point being uncovered, is fixed as in fig. 21. plate IX.

b, Gives a view of the back part of one of the crotchets, which is twelve inches long.

c, A front view of the point, to ſhew its proportional length and breadth.

d, The ſciſſars for perforating the cranium in very narrow and diſtorted pelviſes. They ought to be made very ſtrong, and at leaſt nine inches in length, with ſtops or reſts in the middle of the blades, by which a large dilatation is more eaſily made.

Fig. 35. gives an anterior view of the improved lever or *Vectis* by Roonhuyſen, an inſtrument now come into great reputation. Fig. 36. ſhews the ſame in profile. Fig. 37. the lever recommended by Baudelocque. Fig. 38. one of the blades of a lever recommended by M. Herbinaux, fixed in the handle. Fig. 39. an anterior view of the ſame blade with the ſtrap. Fig. 40. the ſpout of the ſyringe, when the inſtrument is uſed for injecting oil, or any other liquid, into the uterus. The following is a general deſcription of Roonhuyſen's lever, with the method of uſing it, as given by M. Preville, and added to his edition of Smellie's Midwifery. "The lever is an oblong piece of iron, eleven inches long, one broad, and about an eighth of an inch in thickneſs; it is ſtraight in its middle for four inches, and becomes gradually curved at each extremity; the curves are of different lengths and depths; the edges are rounded; and the extremities for the ſpace of an inch, and alſo the middle of the inſtrument, are directed to be covered with plaſter, and then the whole of it to be ſheathed with thin dogſkin; taking care to avoid inequalities or folds, which might injure the woman or child. In uſing it, the accoucheur muſt introduce the fore finger of his left hand into the vagina near the anus, to ſerve as a guide for the inſtrument, which muſt now be gently inſinuated between his finger and the head of the child, taking care that no part of the uterus be included between the lever and the head. The inſtrument muſt then be moved to the right and to the left, to find where there is the greateſt ſpace, and in ſome degree to looſen and diſengage the head; and then gradually carried round, until it comes under the pubes, lifting the end of it from time to time, to obtain a freer paſſage. The handle of it muſt now be raiſed, and the inſtrument gently ſhifted about, until the occiput is exactly lodged in its curve. The more

more completely and exactly the curve touches and embraces the head, the more ſpeedily and eaſily the delivery will be effected. The inſtrument being thus firmly and equally applied to the head, the accoucheur muſt ſlowly and uniformly raiſe the handle with his right hand, while with his left he preſſes the middle of it downward; by this means the coccyx is forced backward, and the lower part of the pelvis is enlarged. By continuing to raiſe the handle of the lever and to preſs down its middle or centre, the head of the child is made to deſcend into the dilated cavity of the vagina: and this is commonly effected in a few minutes; when the left hand muſt be applied firmly againſt the anus and perinæum, forcing thoſe parts upwards and forwards towards the orifice of the vagina, to prevent laceration; for which purpoſe alſo the whole operation muſt be performed ſlowly and cautiouſly, imitating as much as poſſible a natural labour."

"We found," add the authors of the paper, "a cord fixed round one of the ends of the inſtrument, about the middle of the curve. This cord, we imagined, ſerved no other purpoſe than to point out the end of the inſtrument commonly made uſe of, or to meaſure the length of the part introduced."—See Dr. Denman's account of the VECTIS, page 271.

Fig. 41. Mr. Bernard's new inſtrument for tapping in the ovarian dropſy, deſcribed in p. 509.

PRACTICE OF MIDWIFERY.

PART IV.

DISEASES OF CHILDREN.

MANY of the diſeaſes incident to the human ſpecies in the early periods of life, have been treated on in our preceding volumes. Some, however, remain to be conſidered, but more eſpecially thoſe peculiar to the infant ſtate. By way of introduction, we ſhall therefore make a few obſervations on the nurſing and management of children ſoon after their birth.

CHAP. I. TREATMENT OF INFANTS IN THE MONTH.

FROM the annual regiſters of the dead it appears, that about one half of the children born in Great Britain die under twelve years of age; and this very great mortality Dr. Buchan attributes, in a great meaſure, to wrong management. The particulars of this wrong management enumerated by him are,

1. Mothers not ſuckling their own children. This, he owns, it is ſometimes impoſſible for them to do; but where it can be done, he affirms that it ought never to be omitted. This, he ſays, would prevent the unnatural cuſtom of mothers leaving their own children to ſuckle thoſe of others; on which he paſſes a moſt ſevere cenſure, and indeed ſcarcely any cenſure can be ſevere enough upon ſuch inhumanity. Dr. Buchan informs us, "He is ſure he ſpeaks within bounds, when he ſays not one in a hundred of theſe children live who are thus abandoned by their mothers." For this reaſon, he adds, that no mother ſhould be allowed to ſuckle another's child till her own be fit to be weaned. A regulation of this kind would ſave many lives among the poorer ſort, and would do no harm to the rich; as moſt women who make good nurſes are able to ſuckle two children in ſucceſſion upon the ſame milk.

2. Another ſource of the diſeaſes of children is the unhealthi-

nefs of parents; and our author infifts that no perfon who labours under any incurable malady ought to marry.

3. The manner of clothing children tends to produce difeafes. All that is neceffary here, he fays, is to wrap the child in a foft loofe covering; and the foftnefs of every part of the infant's body fufficiently fhews the injury which muft neceffarily enfue by purfuing a contrary method.

4. A new-born infant, inftead of being treated with fyrups, oils, &c. ought to be allowed to fuck the mother's milk almoft as foon as it comes into the world. He condemns the practice of giving wines and fpirituous liquors along with the food foon after birth; and fays, that if the mother or nurfe has a fufficient quantity of milk, the child will need little or no other food before the third or fourth month. But to this it may reafonably be objected, not only that the nurfing would be very fevere on the mother; but if the child be thus left long without food, it will not eafily relifh it for fome time, and its ftomach is apt to be eafily hurt by a flight change of diet after it has been long accuftomed to one thing. Neither can it be fhewn, that the ftrongeft and moft healthy infants are thofe which get no other food but the mother's milk during the firft months of their life. In fact, children are evidently of a weak and lax habit of body, fo that many of their difeafes muft arife from that caufe: all directions which indifcriminately advife an antiphlogiftic regimen for infants as foon as they come into the world, muft of neceffity be wrong. Many inftances in fact might be brought to fhew, that by the prepofterous method of ftarving infants, and at the fame time treating them with vomits and purges, they are often hurried out of the world. Animal food is exceffively agreeable to children, and they ought to be indulged with it in moderation; and this will prove a much better remedy for thofe acidities with which children are often troubled, than magnefia, prepared chalk, or other abforbents, which have the moft pernicious effects on the ftomachs of thefe tender creatures, and pall the appetite to a furprifing degree. The natural appetites of children are indeed the beft rule by which we can judge of what is proper or improper for them. They muft no doubt be regulated as to the quantity; but we may be affured that animal food, either roafted or boiled, will not hurt if taken in moderation. When children are fick, they refufe every thing but the breaft; and if their diforder be very fevere, they will refufe it alfo; and in this cafe they ought not to be preffed to take food of any kind; but when their ficknefs goes off, their appetite alfo returns, and they will require the ufual quantity of food.

As moft young children, if in health, naturally fleep much, and pretty foundly, we may always be apt to fufpect that fomething is amifs when they begin to be fubject to watching and

frights; ſymptoms which ſeldom or never occur but either in conſequence of ſome preſent diſorder not yet taken notice of, or as the certain forerunners of an approaching indiſpoſition. We ſhould immediately, therefore, endeavour to find out their cauſe, that we may uſe every poſſible means to remove or prevent it; otherwiſe the want of natural reſt, which is ſo very prejudical to perſons of all ages, will ſoon reduce the infant to a low and emaciated ſtate, which may be followed by an hectic fever, diarrhœa, and all the other conſequences of weakneſs and debility. Theſe ſymptoms being always the effects of irritation and pain, may proceed, in very young infants, from crudities or other affections of the *primæ viæ* producing flatulencies or gripes; about the ſixth or ſeventh month, they may be owing to that uneaſineſs which commonly accompanies the breeding of teeth; and after a child is weaned, and begins to uſe a different kind of food, worms become frequently an additional cauſe of watchings and diſturbed ſleep. Hence, to give the neceſſary relief on theſe occaſions, the original complaint muſt firſt be aſcertained from the child's age, and other concomitant circumſtances, and afterwards treated according to the nature of the caſe. Women and nurſes are too apt to have recourſe to opiates in the watchings of children, eſpecially when their own reſt happens to be much diſturbed by their continual noiſe and clamour. But this practice is very prejudicial, and never ought to have place when the belly is in the leaſt obſtructed.

Dr. Struve, who has lately written on the phyſical education of children, ſays, "Infants cannot ſleep too long; and it is a favourable ſymptom, when they enjoy a calm and long-continued reſt, which they ſhould by no means be deprived of, as this is the greateſt ſupport granted to them by nature. A child lives, comparatively, much faſter than an adult; its blood flows more rapidly; every ſtimulus operates more powerfully; and not only its conſtituent parts, but its vital reſources alſo, are more ſpeedily conſumed. Sleep promotes a more calm and uniform circulation of the blood; it facilitates the aſſimilation of the nutriment received, and contributes towards a more copious and regular depoſition of alimentary matter, while the horizontal poſture is the moſt favourable to the growth and bodily developement of the child.

"Sleep ought to be in proportion to the age of the infant. After an uninterrupted reſt of nine months in the ſtate of a fœtus, this ſalutary refreſhment ſhould continue to fill up the greater part of a child's exiſtence; and Prof. Hufeland affirms, that a continued watchfulneſs of twenty-four hours would prove deſtructive. After the age of ſix months, the periods of ſleep, as well as all other animal functions, may in ſome degree be regulated; yet, even then, a child ſhould be ſuffered to ſleep the whole night, and ſeveral hours both in the morning and after-

noon. Mothers and nurſes ſhould endeavour to accuſtom infants, from the time of their birth, to ſleep in the night preferably to the day; and for this purpoſe they ought to remove all external impreſſions which may diſturb their reſt, ſuch as noiſe, light, &c. but eſpecially not to obey every call for taking them up, and giving food at improper times. After the ſecond year of their age, they will not inſtinctively require to ſleep in the forenoon, though after dinner it may be continued to the third and fourth year of life, if the child ſhews a particular inclination to repoſe; becauſe, till that age, the full half of its time may ſafely be allotted to ſleep. From that period, however, it ought to be ſhortened for the ſpace of one hour with every ſucceeding year; ſo that a child of ſeven years old may ſleep about eight, and not exceeding nine, hours: this proportion may be continued to the age of adoleſcence, and even manhood.

" To awaken children from their ſleep with a noiſe, or in an impetuous manner, is extremely injudicious and hurtful: nor is it proper to carry them from a dark room immediately into a glaring light, or againſt a dazzling wall; for the ſudden impreſſion of light debilitates the organs of viſion, and lays the foundation of weak eyes from early infancy.

" A bed-room, or nurſery, ought to be ſpacious and lofty, dry, airy, and not inhabited through the day. No ſervants, if poſſible, ſhould be ſuffered to ſleep in the ſame room; and no linen nor waſhed clothes ſhould ever be hung there to dry, as they contaminate the air in which ſo conſiderable a portion of infantine life muſt be ſpent. The conſequences attending a vitiated atmoſphere in ſuch rooms are various, and often fatal. Feather-beds ſhould be baniſhed from nurſeries, as they are an unnatural and debilitating contrivance. The windows ſhould never be opened at night, but left open the whole day, in fine clear weather. Laſtly, the bedſtead muſt not be placed too low on the floor; nor is it proper to let children ſleep on a couch which is made without any elevation from the ground."

CHAP. II. OF FITS OR CONVULSIONS.

ACCORDING to Dr. Armſtrong, *inward fits*, as they are called, are in general the firſt complaint that appears in children; and, as far as he has obſerved, moſt, if not all, infants, during the firſt month, are more or leſs liable to them. The ſymptoms are theſe: the child appears as if it was aſleep, only the eyelids are not quite cloſed; and if you obſerve them narrowly, you will ſee the eyes frequently twinkle, with the white of them turned up. There is a kind of tremulous motion in the muſcles of the face and lips, which produces ſomething like a ſimper or a ſmile, and

ſometimes almoſt the appearance of a laugh. As the diſorder increaſes, the infant's breath ſeems now and then to ſtop for a little; the noſe becomes pinched; there is a pale circle about the eyes and mouth, which ſometimes changes to livid, and comes and goes by turns; the child ſtarts, eſpecially if you go to ſtir it ever ſo gently, or if you make any noiſe near it. Thus diſturbed, it ſighs, or breaks wind, which gives relief for a little, but preſently it relapſes into the dozing. Sometimes it ſtruggles hard before it can break wind, and ſeems as if falling into convulſions; but a violent burſt of wind from the ſtomach, or vomiting, or a loud ſit of crying, ſets all to rights again. As the child increaſes in ſtrength, theſe fits are the moſt apt to go off ſpontaneouſly and by degrees; but in caſe they do not, and if there is nothing done to remove them, they either degenerate into an almoſt conſtant drowſineſs (which is ſucceeded by a fever and the thruſh), or elſe they terminate in vomitings, ſour, curdled, or green ſtools, the watery gripes, and convulſions. The thruſh, indeed, very often terminates in theſe laſt ſymptoms. Wherefore, as theſe complaints naturally run into one another, or ſucceed one another, they may be conſidered, in a manner, as only different ſtages of the ſame diſeaſe, and which derive their origin from the ſame cauſe. Thus, the inward fits may be looked upon as the firſt ſtage of the diſorder; the fever and thruſh (when it happens), as the ſecond; the vomitings, ſour, curdled, green, or watery ſtools, as the third; and convulſions, as the laſt.

As to the cauſe of theſe complaints, he obſerves, that in infants the glandular ſecretions, which are all more or leſs glutinous, are much more copious than in adults. During the time of ſucking, the glands of the mouth and fauces being ſqueezed by the contraction of the muſcles, ſpue out their contents plentifully; which afterwards mixing with the mucus of the gullet and ſtomach, render the milk of a ſlimy conſiſtence, by which means it is not ſo readily abſorbed into the lacteals; and as in moſt infants there is too great an acidity in the ſtomach, the milk is thereby curdled, which adds to the load; hence ſickneſs and ſpaſms, which, being communicated by ſympathy to the nerves of the gullet and fauces, produce the convulſive motions above deſcribed, which go commonly by the name of inward fits. The air, likewiſe, which is drawn in during ſuction, mixing with the milk, &c. in the ſtomach, perhaps contributes towards increaſing the ſpaſms above mentioned. Dr. Armſtrong is the more induced to attribute theſe fits to the cauſes now aſſigned, that they always appear immediately after ſucking or feeding; eſpecially if the child has been long at the breaſt, or fed heartily, and has been laid down to ſleep without having firſt broken wind, which ought never to be done. Another reaſon is, that nothing relieves them ſo ſoon as belching or vomiting; and the milk or food they throw up is generally

either curdled, or mixed with a large quantity of heavy phlegm. In case they are not relieved by belching or vomiting, the fits sometimes continue a good while, and gradually abate, according as the contents of the stomach are pushed into the intestines; and as soon as the former is pretty well emptied, the child is waked by hunger, cries, and wants the breast; he sucks, and the same process is repeated. Thus, some children for the first weeks are kept almost always in a doze, or seemingly so; especially if the nurses, either through laziness or want of skill, do not take care to rouse them when they perceive it is not a right sleep, and keep them awake at proper intervals. This dozing is reckoned a bad sign amongst experienced nurses, who look upon it as a forerunner of the thrush, as indeed it often is; and therefore, when it happens, we ought to be upon our guard to use the necessary precautions for preventing that disorder.

For these disorders, the only remedy recommended by Dr. Armstrong is antimonial wine, given in a few drops, according to the age of the infant. By this means the superabundant mucus will no doubt be evacuated; but at the same time we must remember, that this evacuation can only palliate, and not cure, the disease. This can only be effected by tonics: and a solution of the extract of bark, made into a syrup, will readily be taken by infants, and may be safely exhibited from the very day they come into the world, or as soon as their bowels are emptied of the meconium by the mother's milk, or any other means.

CHAP. III. ACCIDENTS IN THE BIRTH.

Dr. Clarke observes, that fractures of the limbs and compressions of the brain often happen in difficult labours; and that the latter are often followed by convulsions soon after delivery. In these cases, he says, it will be advisable to let the navel-string bleed two or three spoonfuls before it be tied. Thus the oppression of the brain will be relieved, and the disagreeable consequences just mentioned will be prevented. But if this has been neglected, and fits have actually come on, we must endeavour to make a revulsion by all the means in our power; as by opening the jugular vein, procuring an immediate discharge of the urine and meconium, and applying small blisters to the back, legs, or behind the ears. The semicupium, too, would seem to be useful in this case, by driving the oppressive load of fluids from the head and upper parts.

It sometimes happens after a tedious labour, that the child is so faint and weak as to discover little or no signs of life. In such a case, after the usual cleansing, the body should be immediately wrapped in warm flannel, and briskly tossed about in the nurse's

arms, in order, if possible, to excite the languid circulation. If this fail, the breast and temples may be rubbed with brandy or other spirits; or the child may be provoked to cry by whipping, or other stimulating methods, as the application of onion, or salt and spirit of hartshorn, to the mouth and nostrils. But after all these expedients have been tried in vain, and the recovery of the child absolutely despaired of, it has sometimes been happily revived by introducing a short catheter or blow-pipe into the mouth, and gently blowing into the lungs at different intervals. Such children, however, are apt to remain weak for a considerable time, so that it is often no easy matter to rear them; and therefore particular care and tenderness will be required in their management, that nothing may be omitted which can contribute either to their preservation or the improvement of their strength and vigour. Fractures, &c. must be treated as in adult subjects.

CHAP. IV. Of DENTITION.

All the disorders which arise from a retention of the meconium, such as the red gum, may easily be removed by the use of gentle laxatives; but the great source of mortality among children is the breeding of their teeth. The usual symptoms produced by this are fretting; restlessness; frequent and sudden startings, especially in sleep; costiveness; and sometimes a violent diarrhoea, fever, or convulsions. In general, those children breed their teeth with the greatest ease who have a moderate laxity of the bowels, or a plentiful flow of saliva during that time.

In mild cases, we need only, when necessary, endeavour to promote the means by which nature is observed to carry on the business of dentition in the easiest manner. For this purpose, if a costiveness be threatened, it must be prevented, and the body kept always gently open; and the gums should be relaxed by rubbing them frequently with sweet oil, or other softening remedies of that kind, which will greatly diminish the tension and pain. At the same time, as children about this period are generally disposed to chew whatever they get into their hands, they ought never to be without something that will yield a little to the pressure of their gums, as a crust of bread, a wax candle, a bit of liquorice-root, or such like; for the repeated muscular action, occasioned by the constant biting and gnawing at such a substance, will increase the discharge from the salivary glands, while the gums will be so forcibly pressed against the advancing teeth, as to make them break out much sooner, and with less uneasiness, than would otherwise happen. Some likewise recommend a slice of the rind of fresh bacon, as a proper masticatory for the child, in order to bring moisture into its mouth, and facilitate the eruption

of the teeth by exercifing the gums. If thefe means, however, prove ineffectual, and bad fymptoms begin to appear, the patient will often be relieved immediately by cutting the inflamed gum down to the tooth, where a fmall white point fhews the latter to be coming forward. When the pulfe is quick, the fkin hot and dry, and the child of a fufficient age and ftrength, emptying the veffels by bleeding, efpecially at the jugular, will frequently be neceffary here, as well as in all other inflammatory cafes; and the belly fhould be opened from time to time by emollient oily or mucilaginous clyfters. But, on the contrary, if the child be low, funk, and much weakened, repeated dofes of the folution of the bark, and the like ftrengthening medicines, ought to be prefcribed. Blifters applied to the back, or behind the ears, will be often proper in both cafes. A prudent adminiftration of opiates, when their ufe is not forbid by coftivenefs or otherwife, is fometimes of great fervice in difficult teething, as, by mitigating pain, they have a tendency to prevent its bad effects, as a fever, convulfions, or other violent fymptoms; and often they are abfolutely neceffary, along with the teftaceous powders, for checking an immoderate diarrhœa.

When cathartics are neceffary, but the child feems too tender and weak to bear their immediate operation, they fhould be given to the nurfe; in which cafe they will communicate fo much of their virtues to the milk as will be fufficient to purge the infant. This at leaft certainly holds with regard to fome cathartics; fuch, for example, as the infufion of fenna, particularly if a very weak infufion be employed, and not ufed to fuch an extent as to operate as a purgative to the nurfe.

CHAP. V. Of WORMS.

There is no complaint more frequent among children than that of worms, the general fymptoms of which we fhall prefently enumerate; but it muft be obferved, that all the fymptoms commonly attributed to worms alone may be produced by a foulnefs of the bowels. Hence practitioners ought never to reft fatisfied with adminiftering to their patients fuch medicines as are poffeffed only of an anthelmintic quality, but to join them with thofe which are particularly adapted for cleanfing the primæ viæ; as it is uncertain whether a foulnefs of the bowels may not be the caufe of all the complaints. This practice is ftill the more advifable, on account of vifcid humours in the inteftines affording lodgment to the ova of worms; which, without the convenience of fuch a receptacle, would be more fpeedily difcharged from the body.

The worms that infeft the human body are chiefly of three kinds: the afcarides, or fmall round and fhort white worms; the teres, or

round and long worm; and the tænia, or tape-worm. Children are most subject to the two former, though sometimes also to the latter.

The ascarides have usually their seat in the rectum.—The teretes or lumbrici are about a span long, round and smooth: they are seated for the most part in the upper small intestines: but sometimes they are lodged also in the stomach, and in any part of the intestines, even to the rectum.—The tape-worms are from two to forty feet long, according to the testimony of Platerus; they generally possess the whole tract of the intestines, but especially the ilium: they very much resemble tape in their appearance, whence the name of tape-worm; but another species of this genus, from the resemblance of each joint to a gourd seed, has the name of the gourd-worm.

In the Medical Transactions, vol. I. Dr. Heberden gives a very accurate account of the symptoms produced by the ascarides, from an eminent physician who was troubled with them all his life. They brought on an uneasiness in the rectum, and an almost intolerable itching in the anus; which sensations most usually came on in the evening, and prevented sleep for several hours. They were attended with heat, sometimes so considerable as to produce a swelling in the rectum both internally and externally; and if these symptoms were not soon relieved, a tenesmus was brought on, with a mucous dejection. Sometimes there was a griping pain in the lower part of the abdomen, a little above the os pubis. If this pain was very severe, a bloody mucus followed, in which there were often found ascarides alive. They were also sometimes suspected of occasioning disturbed sleep, and some degree of head-ach.

On this case Dr. Heberden observes, that the general health of the patient did not seem to have suffered from the long continuance of the disease, nor the immediate inconveniences of the disorder itself to have increased. " It is," says he, " perhaps universally true, that this kind of worms, though as difficult to be cured as any, yet is the least dangerous of all. They have been known to accompany a person through the whole of a long life, without any reason to suspect that they had hastened its end. As in this case there was no remarkable sickness, indigestion, giddiness, pain of the stomach, nor itching of the nose, possibly these symptoms, where they have happened to be joined with the ascarides, did not properly belong to them, but arose from some other causes. There is indeed no one sign of these worms, but what in some patients will be wanting."

The above-mentioned patient used purging and irritating clysters with very little success. One drachm and a half of tobacco was infused in six ounces of boiling water; and the strained liquor being given as a clyster, occasioned a violent pain in the lower part of the abdomen, with faintness and a cold sweat: this injection, though

retained only one minute, acted as a ſmart purge, but did little or no good. Lime-water was alſo uſed as a clyſter; which brought on a coſtiveneſs, but had no good effect. Six grains of ſalt of ſteel were diſſolved in ſix ounces of water, and injected. This clyſter in a few minutes occaſioned an aching in the rectum, griped a little without purging, and excited a teneſmus. Some few aſcarides were brought off with it; but all of them were alive. The uneaſy ſenſation in the rectum did not abate till ſome warm milk was thrown up. Whenever the teneſmus or mucous ſtools were thought worth the taking notice of, warm milk and oil generally gave immediate relief. If purging was neceſſary, the lenient purges, ſuch as manna with oil, were, in this particular caſe, made uſe of: rhubarb was found too ſtimulating. But, in general, the moſt uſeful purge, and which therefore was moſt uſually taken, was cinnabar and rhubarb, of each half a drachm: this powder ſeldom failed to bring away a mucus as tranſparent as the white of an egg, and in this many aſcarides were moving about. The cinnabar frequently adhered to this mucus, which did not come off in large quantities, when a purge was taken without cinnabar. Calomel did no more than any other purge which operates briſkly would have done; that is, it brought away aſcarides, with a great deal of mucus. Oil given as a clyſter ſometimes brought off theſe animalcules: the oil ſwam on the ſurface of the mucus, and the aſcarides were alive and moving in the mucus itſelf, which probably hindered the oil from coming in contact with them and killing them.

The doctor alſo obſerves, that mucus or ſlime is the proper neſt of the aſcarides, in which they live, and is perhaps the food by which they are nouriſhed; and it is this mucus which preſerves them unhurt, though ſurrounded with many other liquors, the immediate touch of which would be fatal. It is hard to ſatisfy ourſelves by what inſtinct they find it out in the human body, and by what means they get at it; but it is obſervable in many other parts of nature, as well as here, that where there is a fit ſoil for the hatching and growth of animals and vegetables, nature has taken ſufficient care that their ſeeds ſhould find the way thither. Worms are ſaid to have been found in the inteſtines of infants born dead. Purges, by leſſening this ſlime, never fail to relieve the patient: and it is not unlikely, that the worms which are not forced away by this quickened motion of the inteſtines, may, for want of a proper quantity of it, languiſh, and at laſt die; for if the aſcarides are taken out of their mucus, and expoſed to the open air, they become motionleſs, and apparently die in a very ſhort time. Dr. Heberden ſuppoſes that the kind of purge made uſe of is of ſome conſequence in the cure of all other worms as well as aſcarides; the animals being always defended by the mucus from the immediate action of medicines; and that therefore thoſe purges are the beſt which act briſkly, and of which a repetition can be moſt eaſily

borne. Purging waters are of this sort, and jalap especially for children; two or more grains of which, mixed with sugar, are most easily taken, and may be repeated daily.

From the case above mentioned, and from Dr. Heberden's observations, we may easily see why it is so difficult to destroy these animals: and why anthelmintics, greatly celebrated for some cures, are yet so far from being specifics in the disease. As the worms which reside in the cavities of the human body are never exposed to the air, by which all living creatures are invigorated, it is evident, that in themselves they must be the most tender and easily destructible creatures imaginable, and much less will be requisite to kill them than any of our common insects. The most pernicious substances to any of the common insects are oil, caustic fixed alkali, lime, and lime-water. The oil operates upon them by shutting up the pores of their bodies; the lime-water, lime, and caustic alkali, by dissolving their very substance. In the case of intestinal worms, however, the oil can have very little effect upon them, as they are defended from it by the moisture and mucus of the intestines; the like happens with lime-water: and therefore it is necessary that the medicine should be of such a nature as to destroy both mucus and insects together; for which purpose the caustic fixed alkali is at once safe and efficacious; nor is it probable that any case of worms whatever could resist the proper use of this medicine. A very large dose of any salt indeed will also destroy the mucus and destroy the worms; but it is apt to inflame and excoriate the stomach and intestines, and thus to produce worse disorders than that which it was intended to cure.

Dr. Heberden gives the following remarkable case of a patient cured of worms by enormous doses of common salt, after trying many other remedies in vain. In February, 1757, the patient was seized with uncommon pains in his stomach, attended with nausea, vomiting, and constipation of the bowels, and an almost total loss of sleep and appetite: he soon became much emaciated, and could neither stand nor walk upright; his belly grew small and hard, and closely retracted, insomuch that the sternum covered the navel, and the latter could scarcely be discovered or felt by the finger: his urine was always milky, and soon deposited a thick white sediment; his excrements were very hard and lumpy, resembling those of sheep, only of a brown colour; nor had he ever a stool without some medicine or other to procure it. In this situation he continued four years; during which time he had been in an infirmary, attended by eminent physicians, but was dismissed as incurable. At last he was advised by a neighbour to drink salt and water, as he said he knew one cured by it who had for many years been afflicted with the same kind of pains in the belly and stomach. As his disorder was now almost insupportable, he willingly tried the experiment. Two pounds of common salt were dissolved in as little water as

possible, all which he drank in less than an hour. Soon afterwards he found himself greatly oppressed at the stomach, grew extremely sick, and vomited violently; on the fourth straining he brought up about half a pint of small worms, part ascarides, and the rest resembling those worms which are called the botts, and frequently met with in the stomachs of horses, but much smaller, and about the size of a grain of wheat. The salt soon began to operate downwards, and he had five or six very copious fetid stools, tinged with blood; and in them discharged near an equal quantity of the same kind of worms he had vomited. Being greatly fatigued with the violence of the operations, he fell into a calm sleep, which lasted two hours, during which he sweated profusely, and awoke much refreshed. Instead of his usual pains, he now only complained of a rawness and soreness of his gullet, stomach, and bowels, with an almost unquenchable thirst; to allay which, he drank large quantities of cold water, whey, butter-milk, or whatever he could get. The urine he now passed was small in quantity, and rendered with very great difficulty, being highly saturated with the salt, from whence arose a most troublesome dysuria and strangury. However, these symptoms gradually abated by a free use of the liquors above mentioned; and on the third morning he was so well recovered, that he took two pounds more of salt, dissolved in the like quantity of water. The effects were nearly similar to the former; only that most of the worms were now burst, and came away with a considerable quantity of slime and mucus. The drought, strangury, &c. returned with their former violence, but soon yielded to the old treatment. He sweated very copiously for three days, slept easily, and by that time could extend his body freely: on the fifth day he left his bed, and, though very weak, could walk upright; his strength and appetite soon returned, and he became robust and well.

The anthelmintic medicines which have been recommended by one person or other are in a manner innumerable; but the principal are,

(1) *Quicksilver.* This is very efficacious against all kinds of worms, either taken in the form of calomel or corrosive sublimate. Even the crude metal boiled in water and the water drunk, has been recommended as an almost certain cure. But this, it is evident, can receive little impregnation from the mercury. If, therefore, it have any effect, it must be from some foreign and accidental impregnation. In most instances there can be no objection to mercury, but only that it is not endowed with any attenuating quality whereby the mucus in which these insects reside can be dissolved. It therefore fails in many cases, though it will most certainly destroy worms where it can get at them.

(2) *Granulated tin.* This was for some time celebrated as a specific, and indeed we may reasonably expect good effects from it;

as, by its weight and grittinefs, it rubs off the mucus and worms it contains from the coats of the inteftinal canal, in which cafe they are eafily evacuated by purgatives. In order to produce any confiderable effects, it muft be given in a large dofe.

(3) *Geoffræa-inermis, or cabbage bark.* This remedy is ufed by the inhabitants of Jamaica. The firft account of it which appeared in this country was publifhed in the Phyfical and Literary Effays, vol. II. by Mr. Duguid, furgeon in that ifland. He acquaints us, that the inhabitants of Jamaica, young and old, white and black, are much infefted with worms, efpecially the long round fort; the reafon of which, he thinks, is the quantity of fweet vifcid vegetables which they eat. On diffecting a child of feven months old, who died of vomiting and convulfions, twelve large worms were found; one of them filled the appendix vermiformis, and three of them were entwifted in fuch a manner as to block up the valvula tulpii, fo that nothing could pafs from the fmall to the great guts.—The cabbage bark, however, he tells us, is a fafe and effectual remedy, and the moft powerful vermifuge yet known; and that it frequently brings away as many worms by ftool as would fill a large hat. He owns that it has fometimes violent effects; but this he afcribes to the negroes who make the decoction (in which form the bark is ufed), and not to the remedy itfelf.

Mr. Anderfon, furgeon in Edinburgh, has alfo given an account of this bark and its operation, in a letter to Dr. Duncan, publifhed in the Edinburgh Medical Commentaries, vol. IV. p. 84. From this account it appears, that there are two different kinds of bark; the one much paler than the other: the pale kind operates much more violently than the other. It often occafions loofe ftools, great naufea, and fuch-like fymptoms, attended with great uneafinefs in the belly: in one or two inftances it was fufpected of inducing fyncope. The darker coloured kind refembles the caffia lignea, though it is of a much coarfer texture. This kind, Mr. Anderfon thinks, may be exhibited in any cafe where an anthelmintic is neceffary; the dangerous fymptoms might have followed either from the ufe of the firft kind, or from an overdofe of the fecond. The ufual method of preparing the medicine is by boiling two ounces and a half of the bark in two quarts of water to a pint and a half. Of this a tea-fpoonful may be given at firft in the morning, gradually increafing the quantity till we come to four or five table-fpoonfuls in a day. When exhibited in this manner, Mr. Anderfon informs us, that he never faw it produce any violent fymptoms, and has experienced the beft effects from it as an anthelmintic. After the ufe of this decoction for eight or nine mornings fucceffively, a dofe of jalap with calomel muft be given, which feldom fails to bring away the worms, fome dead, fome alive. If at any time the decoction produce more than one or two loofe ftools, a few drops of liquid

laudanum may be given; and, in general, Mr. Anderſon gave 15 or 20 drops of the ſpirit of lavender with each doſe.

In a letter from Dr. Ruſh, profeſſor of chemiſtry at Philadelphia, to Dr. Duncan of Edinburgh, the following account is given of another preparation of this medicine. "It has long," ſays he, "been a complaint among phyſicians, that we have no vermifuge medicine which can be depended upon. Even calomel fails in many caſes where there are the moſt pathognomonic ſigns of worms in the bowels. But this complaint, it is hoped, is now at an end. The phyſicians of Jamaica have lately found that the cabbage bark, as it is called in the Weſt Indies, made into a ſyrup with brown ſugar, is an infallible antidote to them. I have uſed above 30 pounds of it, and have never found it fail in one inſtance. The ſyrup is pleaſant; it ſometimes pukes, and always purges the firſt or ſecond time it is given."

Notwithſtanding theſe great encomiums, however, the cabbage bark * hath not come into general uſe in Britain. But diſeaſes from the teretes, or lumbrici, as they are often called, the ſpecies of worm againſt which this bark is employed, much leſs frequently occur here than in ſome other countries. When they do occur, in almoſt every inſtance they readily yield to more gentle and ſafe anthelmintics; and the worms may not only be expelled by calomel, but by the vegetable bitters; as the powder of the ſemen ſantonicum, or the like.

(4) *Couhage* or *cow-itch*. This is the dolichos urens or pruriens of Linnæus; and the principles on which it acts are of a mechanical kind. It is ſomewhat ſimilar to the powder of tin, but has been reckoned much more efficacious. It might at firſt appear to occur as an objection to this medicine, that, by the hairs of it entangling themſelves with one another, calculi might be formed in the inteſtines, or obſtructions equally bad; or if the ſharp points and hooks with which it abounds were to adhere to the nervous coats of the inteſtines themſelves, they might occaſion a fatal irritation, which could not be removed by any means whatever. But from the experience of thoſe who have employed it extenſively in practice, it would appear that theſe objections are entirely theoretical; and that it may be employed with perfect ſafety. The ſpiculæ, gently ſcraped off from a ſingle pod, and mixed with ſyrup or melaſſes, are taken for a doſe in the morning faſting. It is repeated in this manner for two or three days without any ſenſible operation; but even a very ſlight purgative taken afterwards has been found to diſcharge an almoſt incredible quantity

* The moſt accurate account of this vegetable, and its effects, has been given by Dr. Wright in the Philoſophical Tranſactions; of which the reader will find a ſhort view under the article Geoffræa, in the order of the alphabet, in the "English Encyclopædia."

of worms. And according to Dr. Bancroft, who has given a very particular account of its use in his Natural History of Guiana, it is one of the safest and most certain anthelmintics yet discovered; but, as well as the bark of the Geoffræa, it has hitherto been very little used in Britain, probably from its not being necessary.

Dr. Saunders gives this medicine in the following way:

(No. 34.) ℞ Dolich. pub, rigid. (Ph. Ed.) ʒj;
Syr. simp. q. s. ut fiat electuarium.
Capiat cochlearium minimum, singulis auroris, ad tertiam usque vicem.

(5) *Indian pink.* This plant, which is the spigelia Marilandica of Linnæus, is also an American plant, and was first recommended in the Edinburgh Physical and Literary Essays by Dr. Garden, of Charlestown, in South Carolina. He is of opinion that a vomit ought always to precede the use of it; and informs us, that half a drachm of it purges as briskly as the same quantity of rhubarb. At other times he has known it produce no effect on the belly, though given in very large quantity: in such cases it becomes necessary to add a grain or two of calomel, or some grains of rhubarb; but then it is less efficacious than when it proves purgative without addition. The use of it, however, in small doses, is by no means safe; as it frequently produces giddiness, dimness of sight, convulsions, &c. The addition of a purgative, indeed, prevents these effects; but at the same time, as already observed, it diminishes the virtue of the medicine. The doctor therefore recommends large doses, as from them he never knew any other effect than the medicine's proving emetic or violently cathartic. The dose is from 12 to 60 or 70 grains of the root in substance, or two, three, or four drachms of the infusion, twice a-day.

In the Medical and Physical Journal, Dr. Barton, who writes on the spigelia, says, "In some parts of Carolina, &c. this invaluable plant is known, among other appellations, by the name of snake-root. It is the *unsteetla* of the Cherokee Indians. Every part of the plant is possessed of the anthelmintic property, and accordingly, in Carolina, the physicians employ the whole plant—chiefly in decoction. But the active power unquestionably resides more especially in the roots. It is the opinion of many persons, that the deleterious effects which occasionally occur from using this vegetable do not arise from any pernicious property inherent in the spigelia, but from the root of a distinct plant which is often mixed with the spigelia. I do not think this notion is entitled to any serious attention. The spigelia is, without doubt, a poisonous and narcotic vegetable. It is, in all probability, by virtue of this poisonous quality, that it proves so beneficial in cases of worms. I am acquainted with a very intelligent physician, who, in the exhibition of the spigelia, always deems it necessary, or proper, to

perfevere in the ufe of the medicine until it produces fome very decided effect upon the brain. I muft confefs, however, that I have often found it completely efficacious, without obferving that it has occafioned the leaft inconvenience to the fyftem. That it has fometimes done mifchief, will not, I believe, be denied. Profeffor Bergius informs us, that he has known inftances of convulfions cured by the fpigelia, although no worms were expelled by it. Dr. Garden, fpeaking of this plant, fays, 'It efpecially anfwers in continued or remitting low worm-fevers, in which I ufe its decoction, adding a fmall proportion of the root of the ferpentaria Virgin. Its effects in abating the feverifh exacerbations are fo confiderable, that in thefe I confider it as the moft powerful fedative. It is an excellent attenuant.' I have been induced to take notice, in this place, of the obfervations of Bergius and Garden, becaufe a pretty extenfive ufe of the fpigelia has now convinced me that this medicine very often affords relief, and, indeed, effects a cure, in cafes in which worms are fuppofed to be prefent, but in which none are difcharged. If I do not greatly miftake, this will be found an highly ufeful medicine in fome of the febrile difeafes of children, unaccompanied by worms, efpecially in the infidious remittent, which fo frequently lays the foundation of dropfy of the brain.

(6.) *Common tobacco.* Dr. Barton fays there is a peculiar mode of employing the leaves of tobacco, in cafes of worms, which has, in many inftances, produced very happy effects. The leaves are pounded with vinegar, and applied, in the fhape of a poultice, to the region of the ftomach, or other part of the abdomen. In confequence of this application, worms are often difcharged, after powerful anthelmintics have been exhibited internally in vain. He fays, we ought not to be furprifed at this effect of the tobacco, fince we know that the fame vegetable, applied externally, is often very efficacious in inducing vomiting. Accordingly, the doctor has for fome years been in the habit of applying tobacco leaves to the region of the ftomach of perfons who have fwallowed large quantities of opium, and other fimilar articles, with the view to deftroy themfelves. It is well known, that in thefe cafes the ftomach is often extremely inirritable, infomuch that the moft powerful emetics have little effect in roufing that organ into action.

(7.) *Melia Azedarach*, pride of India, called in South-Carolina poifon-berry-tree and China-tree, is another remedy mentioned by Dr. Barton. "When I publifhed the firft edition of my collections," fays he, "I had not any experience in the ufe of this vegetable. Since that period, however, I have ufed it in feveral cafes of worms, and always with advantage. Indeed, I am inclined to think that the character of this new anthelmintic has not been too highly drawn. I will not affert that it ought to be preferred

to the ſpigelia; for I have had much more to do with this than with the melia. The melia is unqueſtionably a valuable anthelmintic, and ought to be introduced into general practice. I have employed the bark of the root, both in ſubſtance and in the ſhape of a ſaturated decoction. In the caſe of an adult, who took the decoction in large quantities, with the effect of diſcharging great numbers of worms, it ſeemed to occaſion ſome confuſion of the head, and trembling of the hands. Theſe, perhaps, were accidental ſymptoms; but I am diſpoſed, with the patient, to aſcribe them to the medicine. The worm caſes in which I have found the melia uſeful, were caſes of the common round worm, or lumbricus inteſtinalis. I have not had any opportunity of trying how far it is a remedy againſt the tænia, or tape-worm. But I am informed that, in Carolina, it has been uſed with the effect of diſcharging great numbers of this ſpecies of worm. Should this prove to be the caſe, the melia will be doubly entitled to our attention as an article of the materia medica. It is not merely in caſes of worms that this vegetable has been found uſeful. Mr. Andrew Michaux, an intrepid French botaniſt, informed me, that in Perſia, where this tree grows ſpontaneouſly, the pulp which inveſts the ſtone of the fruit is pounded with tallow, and uſed as an 'antipſoric,' in caſes of tinea capitis in children.

"Is the melia a narcotic or poiſonous vegetable? Its remarkable effects in deſtroying and diſlodging worms renders this probable, but not certain: for many articles which, with reſpect to the human body, are entirely innocent, are known to be noxious to inteſtinal worms, and many other animals. Such is ſugar, as has been demonſtrated by the experiments of Redi, Carminati, and other writers. The caſe which I have alluded to renders the deleterious quality of this vegetable very probable. I may add, that in ſome parts of Carolina the root is deemed poiſonous."

Many of theſe medicines have had their day, and are now very far from being conſidered as ſpecifics. From what has been already obſerved, it muſt pretty clearly appear, that powder of tin, cow-itch, or fixed alkaline ſalts, bid faireſt for deſtroying worms in all the variety of caſes in which they can occur. Alkalies indeed have been but little tried. We have known one caſe in which all the complaints have been removed by a ſingle doſe: we have alſo an inſtance of their efficacy, in an extraordinary caſe of a worm bred in the liver, mentioned in the 2d volume of the Medical Obſervations. The patient had a violent pain in the ſide, and ſometimes in the ſhoulder, as the worm ſhifted its place: but, on the application of a lixivial poultice, the pain went out of the ſide entirely, and kept in the ſhoulder for ſome weeks.

The long round worms ſeem to be the moſt dangerous which infeſt the human body, as they have been known to pierce through

the stomach and intestines, and thus occasion death. The common symptoms of them are nausea, vomiting, loosenefs, fainting, slender intermitting pulse, itching of the nose, and epileptic fits. By the consumption of the chyle they produce hunger, palenefs, weaknefs, costivenefs, tumor of the abdomen, eructations, and rumbling of the intestines; but it is from the perforation of the intestines that the disease proves so frequently fatal. A child may be known to have worms from his cold temperament, palenefs of the countenance, livid eye-lids, hollow eyes, itching of the nose, voracity, startings, and grinding of the teeth in sleep; and more especially by a very fetid breath. Very frequently, however, they are voided by the mouth and anus, in which case there is no room for doubt.

Dr. Hugh Smith considers the most efficacious anthelmintics to be tin and its preparations; mercurials, vitriolated iron, and sweet oil. He directs the following to be used according to circumstances:

(No. 35.) ℞ Limatur. stanni, ʒj. ad ʒiij.
Capiat mane et vesp. ex theriac. com. melle vel quovis alio vehiculo.

(No. 36.) ℞ Auri musivi, ℈ij. ad ʒij.
Sumat bis die ex quovis vehiculo.

It may be necessary, he observes, during the use of the above preparations, to administer once in six or seven days a mercurial cathartic.

Amongst the different preparations of mercury, the hydrargyrus cum sulphure claims the preference.

(No. 37.) ℞ Hydrarg. cum sulph. ℥j.
Pulv. Rhabarb. ʒj.
M. ft. pulv.—Dos. ʒj ad ʒjß. bis die.

(No. 38.) ℞ Ferr. vitriolat. ʒjß. Solve in
Aq. cinnam.
Aq. distil. aa ℔ß.
Dos. ℥ij. ad ℥iv. mane et vespere.

(No. 39.) ℞ Ol. amygd. dulc.
Aq. fontan. aa ℥ij.
M. ft. Haust. omni mane jejun. ventriculo sumend.

The doctor also directs oil to be injected to the extent of ℔ß. glysterwise; which he says will greatly tend to the destruction of the ascarides, whose seat is principally confined to the rectum.

To the foregoing we will add the methods recommended by Dr. Temple; who says, the long round worm and short flat worm may generally be removed by some of the following medicines:

(No. 40.) ℞ Pulv. spigel. Maryland. gr. x.
Capiat mane et vespere in theriaca vel quovis idoneo vehiculo.

The above is proper for a child of eight years of age, and an adult may take half a drachm for a dose. A child of eight years old may also take,

(No. 41.) ℞ Pulv. rhab. gr. x.
Aloes socotorin. gr. j.
Calomel ppt. gr. ij.
M. f. pulv. mane primo sumend.

Vel, (No. 42.) ℞ Rasur. stanni,
Cons. absinth. aa ℥ss.
Syr. ejusdem q. s.
M. f. elect. capt. ʒj. omni mane.

Vel, (No. 43.) ℞ Siliquæ Hirsutæ q. v.
Theriac. com. q. s.
M. f. elect. capt. cochl. j. minim. mane primo per dies tres, et postea dos. rhab.

The ascarides, he observes, are generally seated just within the anus, and may be dislodged by some of the following means:

(No. 44.) ℞ Fol. absinth.
Fol. rutæ aa ℥j. coque in q. s.
Aq. puræ ad colat. ℥x.
Ol. olivæ ℥ij. M. f. enema.

Vel, (No. 45.) ℞ Aq. calc. tepid. ℥xij. pro enemate.

Vel, (No. 46.) ℞ Decoct. pro enemat. ℥vj.
Aloes ʒj.
Solve et fiat enema.

In the Medical Commentaries, vol. II. we have an account of the intestines being perforated by a worm, and yet the patient recovered. The patient was a woman troubled with an inflammation in the lower part of the abdomen. The pain was so violent, that for six days she slept none at all; the tumor then broke, discharged upwards of a pound of thin watery sanies, immediately after which the excrements followed. The next day she was extremely low; her pulse could scarcely be felt; the extremities were cold; and there was a considerable discharge from the wound, which had already begun to mortify. She got a decoction of the bark with wine, which alleviated the symptoms; but in removing the mortified parts, a worm was found among them nine inches long, and as thick as an eagle's quill. By proper applications, the discharge of excrements ceased, and she recovered perfect health. She was sensible of no accident giving rise to the inflammation; so that in all probability it arose entirely from the worm itself.

The tænia, or tape-worm, as it is called, is one of those most difficult to be removed from the human body. It is of two kinds, the tænia solium, and the tænia lata; which are described by naturalists. The reason of its being so difficult to expel is, that though portions of it are apt to break off and be discharged, it is

endowed with a power of reproduction, so that the patient is little or nothing better. The symptoms occasioned by it are not different from those above described. A specific against the tænia lata was, at one time, so much celebrated in France, that the king thought proper to purchase it from the proprietor (Madame Nouffer), and the account of it has been translated into English by Dr. Simmons. The patients are required to observe no particular regimen till the day before they take the specific. That day they are to take nothing after dinner till about seven o'clock; after which they are to take the following soup: "Take a pint and a half of water, two or three ounces of good fresh butter, and two ounces of bread cut into thin slices: add to this, salt enough to season it, and then boil it to the consistence of panada." About a quarter of an hour after this, they take a biscuit and a glass of white-wine, either pure or mixed with water; or even water alone, if they have not been accustomed to wine. If the patient has not been to stool that day (which, however, is not usual with patients in this way), the following clyster is to be injected: "Take a small quantity of the leaves of mallows, and boil them in a sufficient quantity of water, mixing with it a little salt, and when strained off add two ounces of olive oil." Next morning, about eight or nine hours after the supper above mentioned, the specific is to be taken. This is no other than two or three drachms of the root of male fern, polypodium filix mas of Linnæus, gathered in autumn, and reduced to fine powder. It is to be taken in any distilled water, or in common water. This medicine is apt to occasion a nausea, to avoid which, Madame Nouffer allows her patients to chew any thing that is agreeable, but forbids any thing to be swallowed; or they may smell to vinegar, to check the sickness: but if, notwithstanding this, the specific be thrown up, a fresh dose must be swallowed as soon as the sickness is gone off, and then they must try to sleep. About two hours after this the following bolus is to be taken: "Take of the panacea of mercury fourteen times sublimed, and select resin of scammony, each ten grains; of fresh and good gamboge, six or seven grains: reduce each of these substances separately into powder, and then mix them with some conserve into a bolus." This composition is to be swallowed at two different times, washing it down with one or two dishes of weak green tea, after which the patient must walk about his chamber. When the bolus begins to operate, he is to take a dish of the same occasionally, until the worm be expelled; then, and not before, Madame Nouffer gives him broth or soup, and he is directed to dine as is usual after taking physic. After dinner he may either lie down or walk out, taking care to conduct himself discreetly, to eat but little supper, and to avoid every thing that is not of easy digestion.

The cure then is complete; but it is not always effected with

the ſame quickneſs in every ſubject. He who has not kept down the whole bolus, or who is not ſufficiently purged by it, ought to take, four hours after it, from two to eight drachms of Epſom ſalt diſſolved in boiling water. The doſe of this ſalt may be varied according to the temperament and other circumſtances of the patient.

If the worm ſhould not come away in a bundle, but in the form of a thread (which particularly happens when the worm is involved in much tenacious mucus), the patient muſt continue to ſit upon the cloſe-ſtool without attempting to draw it away, drinking at the ſame time warm weak tea: ſometimes this alone is not ſufficient, and the patient is obliged to take another doſe of purging ſalt, but without varying his poſition till the worm be wholly expelled.

It is unuſual for patients who have kept down both the ſpecific and purging doſe, not to diſcharge the worm before dinner-time. This, however, ſometimes happens when the dead worm remains in large bundles in the inteſtines, ſo that the fæces becoming more limpid towards the end of the purging, paſs by it without drawing it with them. The patient may in this caſe eat his dinner; and it has been obſerved, that the food, joined to the uſe of a clyſter, has brought about the expulſion of the worm.

Sometimes the worm is brought away by the action of the ſpecific alone, before the patient has taken the purging bolus: when this happens, Madame Nouffer gives only two-thirds of it, or ſubſtitutes the ſalt in its ſtead.

Patients muſt not be alarmed by any ſenſation of heat or uneaſineſs they may feel during the action of the remedy, either before or after a copious evacuation, or juſt as they are about to void the worm. Theſe ſenſations are tranſitory, and go off of their own accord, or by the aſſiſtance of the vapour of vinegar drawn in at the noſe.

They who have vomited both the ſpecific and bolus, or who have kept down only a part of them, ſometimes do not void the worm that day. Madame Nouffer therefore directs them to take again that night the ſoup, the wine, and biſcuit; and, if circumſtances require it, the clyſter. If the worm do not come away during the night, ſhe gives them early the next morning another doſe of the ſpecific, and, two hours afterwards, ſix drachms or an ounce of purging ſalt, repeating the whole proceſs of the preceding day; excepting the bolus, which ſhe ſuppreſſes.

She obſerves, that very hot weather diminiſhes in ſome degree the action of her remedy: ſhe therefore prefers the month of September for adminiſtering it; but as ſhe has not been always able to chooſe the ſeaſon, and has been ſometimes obliged to undertake the cure of patients in the hotteſt days of ſummer, ſhe then gave her ſpecific very early in the morning; and with this precaution ſhe ſaw no difference in its effects.

On the day appointed for the trial of this medicine before the commiſſioners nominated by the king of France, it was exhibited to five different perſons; but only one of them was certainly known to have the tænia lata by having diſcharged parts of it before. That perſon was cured; the ſecond voided a portion of the tænia ſolium; the third ſome aſcarides, with a part of the tænia ſolium; the fourth and fifth voided no worms; but the laſt conſidered much of the viſcid ſlime he voided to be worms in a diſſolved ſtate.

This trial was thought ſufficient to aſcertain the efficacy of the medicine, and further trials were made by thoſe to whom the ſecret was communicated. The firſt voided two tænia, after much vomiting and eighteen or twenty ſtools; the ſecond had no vomiting, but was as violently purged, and diſcharged two worms; the third had twenty copious ſtools during the night, and diſcharged the worm in the morning; and the fifth was affected in much the ſame manner. Some others, who were not relieved, were ſuppoſed not to have a tænia.

This ſpecific, however, is not to be conſidered as a new diſcovery; the efficacy of fern in caſes of tænia having been known long ago. Theophraſtus preſcribes its root, in doſes of four drachms, given in water ſweetened with honey, as uſeful in expelling flat worms. Dioſcorides orders it in the ſame doſe, and adds, that its effects are more certain when it is mixed with four oboli (forty grains) of ſcammony or black hellebore; he particularly requires that garlic ſhould be taken beforehand. Pliny, Galen, Oribaſius, and Aetius, aſcribe this ſame virtue to fern; and are followed in this by Avicenna, and the other Arabian phyſicians. Dorſtenius, Valerius, Cordus, Dodonæus, Mathiolus, Dalechampius, who commented on Diſcorides, or copied him in many things, all mention the fern-root as a ſpecific againſt the tænia. Sennertus, and Burnet after him, recommended in ſimilar caſes an infuſion of this plant, or a drachm of its powder for young perſons, and three drachms for adults. Simon Paulus, quoted by Ray and Geoffroy, conſiders it as the moſt efficacious of all poiſons againſt the flat worm, and as being the baſis of all the ſecret remedies extolled by empirics in that diſeaſe. Andry (*Gener. des Vers, p.* 246, 249), prefers diſtilled fern-water to the root in powder, or he employs it only in the form of an opiate, or mixed with other ſubſtances.

Theſe are not the only authors who have mentioned the tænia; many others have deſcribed this worm, the ſymptoms it excites, and the treatment proper to expel it. Almoſt all of them mention the fern-root, but at the ſame time they point out other remedies as poſſeſſing equal efficacy.

For the cure of tænia in an adult, Dr. Temple orders the following:

(No. 47.) ℞ Pulv. polypod. fil. maſ. ʒj ad ʒij.
Sumend. in idoneo vehiculo.

Four hours after it has been taken, this purgative ſhould be adminiſtered:

(No. 48.) ℞ Pulv. jalap. ʒß.
Ol. menth. gtt. ij. m. f. pulv.

Or half an ounce of ſulphur may be given, in any proper vehicle.

Many commend the bark of the root of the mulberry tree, the juice of the *auricula murus*, the roots of *chamæleon niger*, ginger, zedoary, decoctions of mugwort, ſouthernwood, penny-royal, origanum, hyſſop, and in general of all bitter and aromatic plants, &c. Some of them direct the ſpecific to be ſimply mixed and taken in wine or honey and water; others join to it the uſe of ſome purgative remedy, which they ſay adds to its efficacy. Oribaſius, Sylvius, &c. diſtinguiſh the ſpecific that kills the worm from the purgative that evacuates it, and direct them to be given at different times. Sennertus gives a very ſatisfactory reaſon for adopting this method. If we give, ſays he, the purgative medicine and the ſpecific at the ſame time, the latter will be haſtily carried off before it can have exerted its powers on the worm: whereas, if we give the ſpecific firſt, and thus weaken the worm, it will collect itſelf into a bundle, and, being brought away by means of the purge, the patient will be cured. The cure will be more ſpeedy if the *primæ viæ* have been previouſly lubricated. Theſe precautions are all of them eſſential to the ſucceſs of the remedy, nor are they neglected by Madame Nouffer in her method of treatment. The panada and injection ſhe preſcribes the night before, to lubricate the inteſtines and prepare the *primæ viæ*. The fern-root, taken in the morning, kills and detaches the worm: of this the patients are ſenſible by the ceſſation of the pain in the ſtomach, and by the weight that is felt in the lower belly. The purgative bolus, adminiſtered two hours after this, procures a complete evacuation; it is compoſed of ſubſtances that are at once purgative and vermifuge, and which, when adminiſtered alone, by different phyſicians, ſometimes ſucceeded in expelling the worm. If this purgative appear to be too ſtrong, the reader is deſired to recollect, that it produced no ill effects in either of the caſes that came under the obſervation of the phyſicians appointed to make the trials; and that in one of thoſe caſes, by diminiſhing the doſe, they evidently retarded the evacuations.—Regard, however, they obſerve, is to be had both to the age and the temperament of the patient, and the treatment ſhould always be directed by a prudent and experienced phyſician, who may know how to vary the proportions of the doſe as circumſtances may require. If the purgative be not of ſufficient ſtrength, the worm, after being detached by the ſpecific, remains too long a

time in the inteſtines, and becoming ſoon corrupted is brought away only in detached portions: on the other hand, if the purgative be too ſtrong, it occaſions too much irritation, and evacuations that cannot fail to be inconvenient.

Madame Nouffer's long experience, indeed, taught her to diſtinguiſh all theſe circumſtances with ſingular adroitneſs.

This method of cure is, we have ſeen, copied, in a great meaſure, from the ancients: it may be poſſible to produce the ſame effects by varying the remedies; but the manner of applying them is by no means indifferent: we ſhall be always more certain of ſucceſs, if the inteſtines be previouſly evacuated, and if the ſpecific be given ſome time before the purgative bolus. It is to this method that Madame Nouffer's conſtant ſucceſs is attributed.

Her remedy has likewiſe ſome power over the tænia ſolium; but as the rings of this worm ſeparate from each other more eaſily than thoſe of the tænia lata, it is almoſt impoſſible for it to be expelled entire. It will be neceſſary, therefore, to repeat the treatment ſeveral times, till the patient ceaſe to void any portions of worm. It muſt likewiſe be repeated, if, after the expulſion of one tænia ſolium, another ſhould be generated in the inteſtinal canal. This laſt caſe is ſo rare, that it has been ſuppoſed that no perſon can have more than one of theſe worms, and for this reaſon it has been named the *ſolitary worm*, which, being once removed, could never be renewed or replaced by a ſecond: but experience has proved, that this notion is an ill-founded prejudice, and we know that ſometimes theſe worms ſucceed each other, and that ſometimes many of them exiſt together. Two living tænia have been frequently expelled from the ſame patient. Dr. de Haen (*Rat. Med.* tom. viii. p. 157) relates an inſtance of a woman who voided eighteen tænia at once. In theſe caſes the ſymptoms are uſually more alarming; and the appetite becomes exceſſive, becauſe theſe worms derive all their nouriſhment from the chyle. If too auſtere and ill-judged a regimen deprives them of this, they may be expected to attack even the membranes of the inteſtines themſelves. This evil is to be avoided by eating frequently.

Such are the precautions indicated in this diſeaſe. The ordinary vermifuge remedies commonly procured only a palliative cure, perhaps becauſe they were too often improperly adminiſtered. But the efficacy of the preſent remedy, in the opinion of the French phyſicians, ſeems to be ſufficiently confirmed by experience. To the above account, however, it ſeems proper to ſubjoin the following obſervations by Dr. Simmons.

"A Swiſs phyſician, of the name of Herrenſchwand, more than twenty years ago, acquired no little celebrity by diſtributing a compoſition, of which he ſtyled himſelf the inventor, and which

was probably of the ſame nature as Madame Nouffer's. Several very eminent men, as Tronchin, Hovius, Bonnet, Cramer, and others, have written concerning the effects of this remedy. It ſeems that Dr. Herrenſchwand uſed to give a powder by way of preparation, the night before he adminiſtered his ſpecific. Nothing could be ſaid with certainty concerning the compoſition either of one or the other. The treatment was ſaid ſometimes to produce moſt violent effects, and to leave the patients in a valetudinary ſtate. Dr. de Haen was diſſuaded by his friends from uſing it, becauſe it diſordered the patients too much. It will be readily conceived, now that we are acquainted with Madame Nouffer's method, that theſe effects were occaſioned wholly by the purgative bolus. It is not ſtrange, that reſin of ſcammony and jalap combined with gamboge, all of them in ſtrong doſes, ſhould in many ſubjects occaſion the greateſt diſorder. It ſeems likely, however, that much of the ſucceſs of the remedy depends on the uſe of a draſtic purge. Some of the ancients, who were acquainted with the virtues of the fern-root, obſerved that its efficacy was increaſed by ſcammony. Reſinous purges, eſpecially when combined with mercury, have often been given with ſucceſs in caſes of tænia. Dr. de Haen ſaw a worm of this ſort, five ells long, expelled by the reſin of jalap alone. Dr. Gaubius knew a woman who had taken a variety of anthelmintic remedies without any effect, though ſhe had voided a portion of tænia an ell and a half long previous to the uſe of theſe medicines: but at length, after taking a purge of ſingular ſtrength, ſhe voided the worm entire. Many other inſtances of the ſame kind are met with in authors. Other remedies have been occaſionally given with ſucceſs. In Sweden, it has been a practice to drink ſeveral gallons of cold water, and then to take ſome draſtic purge. Boerhaave ſays, that he himſelf ſaw a tænia meaſuring 300 ells expelled from a Ruſſian by means of the vitriolum martis. All theſe methods, however, have been too often ineffectual."

From ſome late accounts, there is reaſon to believe that Dr. Herrenſchwand's remedy for tænia does not ſo exactly agree with that of Madame Nouffer as Dr. Simmons ſeems to imagine. According to the account given by a gentleman who had his information from Dr. Herrenſchwand himſelf, it conſiſts entirely of gamboge and fixed vegetable alkali.

CHAP. VI. Of the WORM-FEVER.

The name of worm-fever is popularly given to thoſe conſtitutional ſymptoms, affecting the pulſe, which are occaſioned by the irritation of worms.

The difficulty of curing what is called a worm-fever, ariſes,

according to Dr. Mufgrave, from its being frequently attributed to worms, when the caufe of the diforder is of a quite different nature. He does not mean to deny that worms do fometimes abound in the human body, nor that the irritation caufed by them does fometimes produce a fever; but he apprehends thefe caufes to be much more uncommon than is generally imagined, and that great mifchief is done by treating fome of the diforders of children as worm cafes, which really are not fo. Dr. Hunter, it is obferved, is of the fame opinion on this point; and he has, we are told, diffected great numbers of children who have been fuppofed to die of worm-fevers, and whofe complaints were of courfe treated as proceeding from worms, in whom, however, there appeared, upon diffection, to be not only no worms, but evident proofs of the diforder's having been of a very different nature.

The fpurious worm-fever, as Dr. Mufgrave terms it, has, in all the inftances he has feen of it, arifen evidently from the children having been indulged with too great quantities of fruit; though a poor cold diet may, he thinks, occafionally give birth to it. Every fort of fruit eaten in excefs will probably produce it; but an immoderate ufe of cherries feems to be the moft common caufe of it. The approach of this diforder has a different appearance, according as it arifes from a habit of eating fruit in rather too large quantities, or from an exceffive quantity eaten at one time. In the former cafe, the patient gradually grows weak and languid; his colour becomes pale and livid; his belly fwells and grows hard; his appetite and digeftion are deftroyed; his nights grow reftlefs, or at leaft his fleep is much difturbed with ftartings, and then the fever foon follows; in the progrefs of which, the patient grows comatofe, and at times convulfed; in which ftate, when it takes place to a high degree, he often dies. The pulfe at the wrift, though quick, is never ftrong or hard: the carotids, however, beat with great violence, and elevate the fkin fo as to be diftinctly feen at a diftance. The heat is at times confiderable, efpecially in the trunk; though at other times, when the brain is much oppreffed, it is little more than natural. It is fometimes accompanied by a violent pain of the epigaftric region, though more commonly the pain is flight, and terminates in a coma; fome degree of pain, however, feems to be infeparable from it, fo as clearly to diftinguifh this diforder from other comatofe affections.

When a large quantity of fruit has been eaten at once, the attack of the diforder is inftantaneous, and its progrefs rapid; the patient often paffing, in the fpace of a few hours, from apparently perfect health, to a ftupid, comatofe, and almoft dying ftate. The fymptoms of the fever, when formed, are in both cafes nearly the fame; except that, in this latter fort, a little purulent matter is

ſometimes diſcharged, both by vomit and ſtool, from the very firſt day. The ſtools in both caſes exhibit ſometimes a kind of curd reſembling curdled milk, at other times a floating ſubſtance is obſerved in them; and ſometimes a number of little threads and pellicles, and now and then a ſingle worm.

Strong purgatives, or purges frequently repeated, in this diſorder, are greatly condemned by Dr. Armſtrong, as they in general not only aggravate the ſymptoms already preſent, but are ſometimes the origin of convulſions. Bloodletting is not to be thought of in any ſtage of the diſorder.

Although frequent purging, however, be not recommended, yet a ſingle vomit and purge are adviſed in the beginning of the diſorder, with a view to evacuate ſuch indigeſted matter and mucus as happens to remain in the ſtomach and bowels Theſe having operated properly, there is ſeldom occaſion for repeating them; and it is ſufficient, if the body be coſtive, to throw up, every ſecond or third day, a clyſter, compoſed of thirty grains of aloes, diſſolved in five ounces of infuſion of camomile.

The diagnoſtics of worms are very uncertain; but, even in real worm caſes, the treatment above recommended would, it is imagined, be much more efficacious than the practice commonly had recourſe to. As worms either find the conſtitution weakly, or very ſoon make it ſo, the frequent repetition of purges, particularly mercurials, cannot but have a pernicious effect.

The diet of children diſpoſed to worms ſhould be warm and nouriſhing, conſiſting in part at leaſt of animal food, which is not the worſe for being a little ſeaſoned. Their drink may be any kind of beer that is well hopped, with now and then a ſmall draught of porter or negus. A total abſtinence from butter is not ſo neceſſary, perhaps, as is generally imagined. Poor cheeſe muſt by all means be avoided; but ſuch as is rich and pungent, in a moderate quantity, is particularly ſerviceable. In the ſpurious worm-fever, the patient ſhould be ſupported occaſionally by ſmall quantities of broth; and, at the cloſe of it, when the appetite returns, the firſt food given ſhould be of the kinds above recommended.

The diet here recommended will, perhaps, be thought extraordinary; as the general idea is, at preſent, that in the management of children, nothing is ſo much to be avoided as repletion and rich food. It is no doubt an error to feed children too well, or to indulge them with wine and rich ſauces; but it is equally an error to confine them to too ſtrict or too poor a diet, which weakens their digeſtion, and renders them much more ſubject to diſorders of every kind, but particularly to diſorders of the bowels. In regard to the ſpurious worm-fever, if it be true that acid fruits too plentifully eaten are the general cauſe of it, it follows as a conſequence, that a warm nutritious diet, moderately

ufed, will moft effectually counteract the mifchief, and fooneft reftore the natural powers of the ftomach. Befides, if the diforder does not readily yield to the methods here directed, as there are many examples of its terminating by an inflammation and fuppuration of the navel, it is highly advifable to keep this probability in view, and by a moderate allowance of animal food to fupport thofe powers of nature, from which only fuch a happy crifis is to be expected.

CHAP. VII. RICKETS.

This is one of the difeafes peculiar to infancy. It feldom attacks children till they are nine months, nor after they are two years old; but it frequently happens in the intermediate fpace between thefe two periods. The difeafe fhews itfelf by a flaccid tumor of the head and face, a loofe flabby fkin, a fwelling of the abdomen, and falling away of the other parts, efpecially of the mufcles. There are protuberances of the epiphyfes of the joints; the jugular veins fwell, while the reft decreafe, and the legs grow crooked. If the child has begun to walk before he be feized with this difeafe, there is a flownefs, debility, and tottering in his motion, which foon brings on a conftant defire of fitting, and afterwards of lying down; infomuch that nothing at laft is moveable but the neck and head. As they grow older, the head is greatly enlarged, with ample futures; the thorax is compreffed on the fides, and the fternum rifes up fharp, while the extremities of the ribs are knotty. The abdomen is protuberant, and the teeth black and carious. In fuch patients as have died of this difeafe, all the folids appear foft and flaccid, and the fluids diffolved and mucous.

The rickets, faid to proceed from a fcrofulous or fcorbutic taint in the parents, may, perhaps, be increafed by that of the nurfe. It is likewife promoted by feeding the child with aqueous and mucous fubftances, crude fummer-fruits, fifh, unleavened farinaceous aliment, and too great a quantity of fweet things. Sometimes it follows intermittent fevers and chronic diforders; and, in fhort, is caufed by any thing which tends to debilitate the body, and induce a vifcid and unhealthy ftate of the juices.

Dr. Bobba, of Italy, prefented to the Medical Society at Paris fome remarks on the caufe of rickets. He fays it is known that the bones owe their folidity to the phofphat of lime, and that confequently the caufe of rickets has been afcribed to a want of that fubftance. However plaufible this theory may be, there are cafes recorded by Morgagni, Portal and Pinel, where a mollification of the bones was obferved to be complicated with the gout. Such a complication feems at firft fight to be impoffible, as one difeafe

originates in a want, and the other in a ſuperabundance, of the phoſphat of lime. This contradiction, however, is but apparent; for, when the bones begin to mollify, we are not always entitled to conclude, that the phoſphat of lime is entirely wanting in the ſyſtem, but it is ſometimes probable, that on account of an inactivity in the veſſels which carry this ſubſtance to the bones, it is directed to other parts, producing arthritic concretions, preternatural oſſifications, &c. Frequently it is depoſited in the urinary ſyſtem, partly from being abſolutely ſuperabundant, partly becauſe any morbific cauſe prevents its being carried to the bones; and it is remarkable that in almoſt all the diſeaſes of the bones the urine depoſits a calcareous ſediment. There are beſides ſome rare caſes, where this calcareous matter has deviated to the genitals and urethra, and gives riſe moſt probably to that ſpecies of blenorrhagy, called by Swediaur arthritic. By a derivation, therefore, of the phoſphat of lime from the bones to the joints, ſymptoms of gout are produced, at the ſame time a mollification of the bones, which complication is named *arthritis rachitica*. Dr. Bobba farther obſerves, that a bad quality of the milk with which children are nouriſhed is likely to be a frequent remote cauſe of the rickets.

The rickets do not uſually prove fatal by themſelves, but if not cured in time they make the perſon, throughout life, deformed in various ways; and often produce very pernicious diſorders, ſuch as carious bones in different parts of the body.

The cure is to be effected by mild carthartics, alteratives, and tonics, ſuch as are uſed in other diſeaſes attended with a debility of the ſyſtem, and a vitiated ſtate of the blood and juices. In the Weſtern Iſlands of Scotland, the medicine uſed for the cure of the rickets is an oil extracted from the liver of the ſkate-fiſh. The method of application is as follows: Firſt, the wriſts and ankles are rubbed with the oil in the evening: this immediately raiſes a fever of ſeveral hours' duration. When the fever from the firſt rubbing ſubſides, the ſame parts are rubbed again the night following; and repeatedly as long as the rubbing of theſe parts continues to excite the fever. When no fever can be excited by rubbing the wriſts and ankles alone, they are rubbed again along with the knees and elbows. This increaſed unction brings on the fever again; and is practiſed as before, till it no longer has that effect. Then the vertebræ and ſides are rubbed along with the former parts; and this unction, which again brings on the fever, is repeated as the former. When no fever can be any longer excited by this unction, a flannel-ſhirt dipped in the oil is put upon the body of the patient: this brings on a more violent and ſenſible fever than any of the former unctions; and is continued till the cure be completed, which it commonly is in a ſhort time.

A German phyſician, Dr. Strack, publiſhed a paper, in which he recommends the filings of iron as a certain remedy in the rickets. This diſeaſe, he obſerves, in general begins with children when they are about ſixteen months old. It is ſeldom obſerved with children before they be one year old, and ſeldom attacks them after they paſs two; and it is very generally worſe where it begins early than where it begins late.

For effecting a cure, it is, he affirms, a matter of the utmoſt conſequence to be able to diſtinguiſh, very early, whether a child will be afflicted with rickets or not. And this, he aſſures us, may be determined by the following ſymptoms: Paleneſs and ſwelling of the countenance; and in that part of the cheeks which ſhould naturally be red, a yellow colour approaching to that of ſulphur. When that is the caſe, he directs that a medicine ſhould be immediately had recourſe to, which will retard the further progreſs of the diſeaſe, and remove what has already taken place. For this purpoſe, he adviſes,

(No. 49.) ℞. Limatur. ferri
Rhabarb. pulv. ſing. gr. v.
Sacch. alb. gr. x.
Fiat pulv. omn. mane et veſp. ſumend.

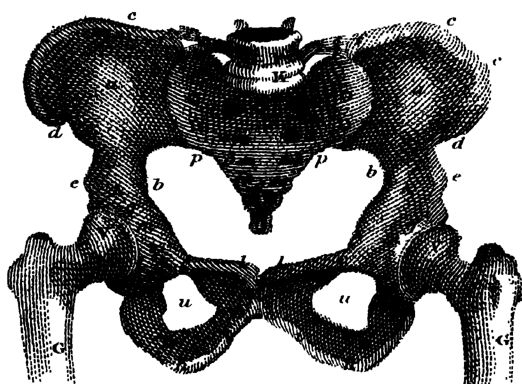
If conſiderable looſeneſs ſhould be produced, it will be neceſſary, at firſt, to perſiſt in the uſe of one doſe only every day.

After a month's continuance in this courſe, according to Dr. Strack, there in general enſues a keen appetite for food, quick digeſtion, and a copious flow of urine; by means of which the fulneſs of the face and yellowneſs of the complexion are by degrees removed, while the natural colour of the countenance and firmneſs of the body in general are gradually reſtored. This practice, he aſſures us, has never failed of ſucceſs in any one inſtance; not even in thoſe children born of parents greatly afflicted with the rickets.

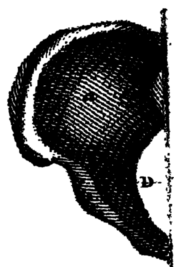
Dr. Smith ſays, the indications of cure will conſiſt in ſtrengthening the habit, and reſtoring to their tone, or figure, the parts that may have been vitiated or diſtorted.

As from the relaxed ſtate of the *primæ viæ*, a quantity of pituitous humours are, for the moſt part, lodged in the ſtomach and inteſtines, a few grains of ipecacuanha, as an emetic, may be adminiſtered; and now and then a gentle purge of rhubarb, with nutmeg, the tinct. aloes, or ſome other warm ſtomach purgative. But we are principally to depend upon a bracing ſtrengthening regimen, chalybeates, the bark, the cold bath, and exerciſe of the body. Chalybeate preparations in proper doſes, according to the age of the patient, will be extremely adviſable. Or, the *mars ſaccharatus* of the late Edinburgh Pharmacopœia, which is an elegant and agreeable form of a chalybeate for children, may be given, from a drachm to two, three or four times

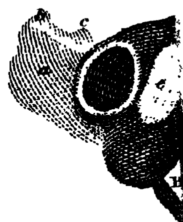
Fig. 1



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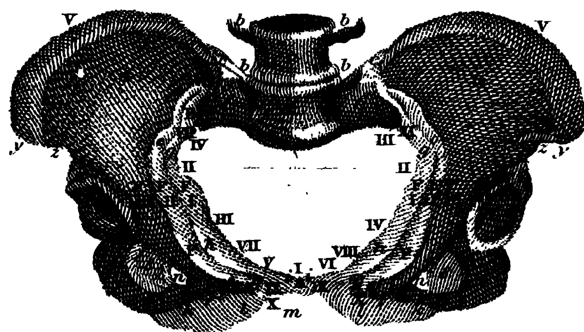


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Fig. 8.



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every day. The infufion of the Peruvian bark, with or without the diluted acid of vitriol, will be ufeful; more particularly, if any feverifh heat, or hectical fymptoms, fhould forbid the ufe of fteel till their removal.

In addition to the ufe of chalybeates, great benefit is often alfo obtained in this difeafe from the ufe of the cold bath; which, under prudent adminiftration, is doubtlefs one of the moft effectual remedies for this complaint with which we are yet acquainted.

CHAP. VIII. DISTORTIONS OF THE LOWER EXTREMITIES.

THE diftortions to which the legs of children are liable may be reduced to three claffes, viz. fuch as are caufed by the unnatural fhape of one or more bones, fuch as are caufed by the improper combination of two or more bones, and thofe in which the two former caufes are combined in the fame fubject. Mr. Sheldrake, in his obfervations on thefe complaints, has treated on the club-foot, the incurvation of the leg, and inflection of the knees.

(1.) *Club-foot.*—If we confider the difeafes in queftion in the order they occur from the beginning of the patient's exiftence, the club-foot has the firft claim to our attention: if all the varieties of that difeafe may be included in one view, it may be faid to include all the circumftances of unnatural form and improper combination of bones; but, in order to form clear ideas of this difeafe, and the probability of treating it with fuccefs, it will be neceffary to confider its varieties in different patients, and its variations in the fame patient, but at different periods.

The club-foot may be occafioned by diflocation, or other accidents, at various periods of life; but, as thefe are anomalous cafes, it is neceffary to limit our attention to that which frequently occurs in *new-born children*, and is alone the fubject of our prefent inveftigation. It is apparently occafioned by fome difproportion between the uterus and its contents, or fome peculiar pofition of the fœtus in utero; and, in various cafes, feems to take place at different periods before the birth, fince in fome, although the child has no power to hold the foot in its natural form and pofition, it may be immediately placed in them by the hand of the practitioner; in others, the diftortion is too great to admit of that practice, although the foot is ftill capable of fome motion; but in others it is perfectly rigid, and incapable of moving at all.

If a foot, wholly clubbed at the birth, be compared with one in the natural ftate, it will be found to vary from it nearly in the

following circumftances: the fole is turned upwards and inwards, fo that the under part of the toes will be vifible, the outer and upper part downwards; fo that, if the child could ftand, it would be upon the fide, and fome portion of the fuperior part of the foot inftead of the fole. Vide Plate XIII. fig. 1, 2, 3.

It is to be lamented, that thofe who have written on diftortions of the legs of children have been more attentive to the pofition in which the limbs are placed than the alteration in the natural ftate of the parts produced by thofe diftortions. Hence we read of *varii* and *valgi*, in which the feet are turned outwards or inwards, without being able to form a clear idea of the caufe of thefe deviations from the natural forms; by fome they are faid to be occafioned by luxations, diflocations, &c. by others they are attributed to the unnatural form of bones, anchylofis, &c. and the methods of treating them recommended are equally vague and deftitute of any well-founded principle: fo much fo, that if we except one method of treating the club-foot recommended by Mr. Chefelden, and which is only applicable to one particular ftate of the difeafe, it will be, perhaps, impoffible to produce a fingle proof that this difeafe has been perfectly cured in any inftance whatever.

Mr. Chefelden mentions, with approbation, a method of curing the club-foot, by placing it in its natural pofition, and binding it with ftrips of cloth, dipped in white of eggs, to confine it there, and repeating this operation until the defect is cured.

Another method of treating this difeafe has been by fixing leg-irons of various conftructions upon the leg, and binding the foot upon them, with a view to reduce it into its natural ftate by compreffion from the bandage. A third method has been by placing the foot in boxes of tin, lead, or copper, of a convenient form, and binding them fo that the compreffion of thefe boxes fhall reduce it to its natural ftate. It has been propofed to effect the fame purpofe by binding the feet in ftrong boots of leather, &c. Some advife that the feet fhould be bound as flat as poffible upon two metal foles, and thefe inferted into two fhoes, connected together by an iron fixed in each heel: this iron contains a joint with a ratchet wheel; when the feet are confined in the fhoes, the toes are turned outwards by degrees; the ratchet wheel is to confine them in their newly-acquired fituation, and, by a repetition of this procefs, the feet are to be turned into their natural fituation.

It is obvious, that Mr. Chefelden's method can only be ufeful in that particular ftate of the difeafe in which the foot can be immediately placed in its natural pofition; fome fuch cafes have been cured upon this principle, by keeping the feet bound up with ftrips of adhefive plafter, until they had acquired the proper

habit; but where it is intended to produce an alteration in the form of the foot, this method is generally insufficient.

The other methods that have been mentioned are founded upon an idea that the disease is caused by malformation of the bones of the foot or leg, perhaps of both; but Mr. Sheldrake contends, that this is not the fact. He even undertakes to shew, that if it was a disease of the bones, these methods are not calculated to remove it; and, of course, some more adequate mode of treatment is necessary.

"It has been asserted," says he, "by the friends of this system, that the bones of young children are so soft, that, by the compression of proper bandages, they may easily be reduced into their proper form: without denying the whole of this position, it will be easy to shew the fallacy of the latter part of it. Whatever bandage acts upon the bones, must previously act upon the soft parts under which they lie: it is obvious, that the delicate structure of a new-born infant cannot bear much compression without being injured; and if the bandages are so applied as not to injure the soft parts, they can produce no effect upon the bones: it is likewise to be remarked, that a simple bandage is tightest, consequently produces the greatest effect, when it is first applied; but as it cannot be so applied as absolutely to prevent all motion of the parts, the attempts of the child to set itself at liberty soon loosen the bandage; so long as they remain without being rebound, no effect whatever is produced; his strength and impatience of restraint increases, the inconveniences of this mode of proceeding are multiplied daily, and the advantages which were at first expected from it diminish in proportion, till in a short time it is laid aside." The shoes with iron soles Mr. Sheldrake thinks liable to equal, if not greater, objections; and he confidently asserts, that it will be difficult, if not impossible, to produce a single instance of a club-foot, completely diseased, being cured by any of the methods mentioned above.

When it was thought advisable to apply mechanical inventions for curing the distorted legs of children, the mechanism used in the treatment of fractures naturally suggested a principle upon which such instruments might be made; but though there is some analogy between the principles upon which fractures and distortions of the extremities should be treated, so far as mechanical application is concerned, the difference between the two diseases is so great, that what may justly be considered as perfection in the treatment of the one, would be very inadequate if relied upon when applied to the other. In fractures, the intention is fully answered by keeping the limb steady in one position until a cure is effected, and the mechanical assistance necessary to effect this is perfectly in the surgeon's power; but, in order to cure

diftortions in the limbs of children, the action of the inftruments to be ufed fhould be permanently exerted, and capable of being conftantly increafed; for the moment the progrefs of that action is difcontinued, all progrefs towards a cure is at an end.

As the joints are too frequently the parts moft affected by thofe diftortions, and as the time requifite to effect a cure is fuppofed to be very great, the machinery ufed fhould be fo adapted as to admit of *loco-motion*: this is commonly done by making joints in the irons correfpondent to thofe in the limbs, and leaving the bandage fo loofe as to admit of the neceffary motion, which, it is evident, renders them almoft ufelefs, fuppofing they were in themfelves an adequate remedy for the difeafe.

The principle upon which all thefe inftruments are conftructed is to place a ftrait fupport on one fide of the diftorted limb, and, by means of bandages, bind it to that fupport till it becomes ftraight.

As there is an indifpenfable neceffity for making joints in thefe inftruments, and leaving the bandages fo loofe as to allow of neceffary motion in the limb, and as fimple bandage, to which principle this apparatus is reducible, can only act by compreffion, it is evident that in practice they cannot produce the effect, of which, in theory, they may be thought capable. In order to apply them, they are ufually fixed to fhoes, and therefore their connection with the limb they are intended to act upon is not fufficiently intimate to keep it in its natural direction; and as removing them from one fhoe to another is extremely troublefome, a common practice is to make them as ftrong as poffible, in order to make this removal lefs frequently neceffary: hence it frequently happens, that in addition to all other imperfections of this mode of treatment, a child, naturally perhaps delicate, and rendered more infirm by imperfections in its limbs, is incumbered with an unneceffary weight of iron and fhoe, and that weight fo applied as to act upon mechanical principles in the moft difadvantageous manner, as an impediment to his loco-motive power, and all this under the miftaken idea of affifting his motion and curing his deformity.

After faying thus much of the defective principles upon which the inftruments ufually employed for the cure of diftorted limbs are conftructed, Mr. Sheldrake defcribes a method of treating thefe difeafes, by which, he fays, they may be more fpeedily and effectually cured.

The idea upon which this method is founded is to fubftitute a fpring, fo adapted to the nature of the diftortion, that when bound upon the limb, its action will *draw the deformed parts into their natural fituation*; when it is neceffary to allow of motion in the limb, that motion, by increafing the re-action of the fpring, accelerates the cure.

Upon a slight inspection of the disease in question, one might perhaps be excused for saying so much deformity could only be occasioned by malformation of some bones in the foot; but when the natural progress of ossification is considered, it will be difficult to find an excuse for saying those bones are unnaturally shaped, when they are so near the cartilaginous state, that they can hardly be said to have become bones at all: in fact, there is great reason to believe that at this period the bones are not the seat of the disease; of course, all attempts to relieve it, by operating upon them, will always prove futile and ineffectual.

From circumstances already mentioned, the club-foot is evidently occasioned by some compression prior to the birth; and if the position of the fœtus in utero be considered, it will be evident that this compression will deprive the exterior muscles of the foot of all power of moving, and, in consequence, of much of their power of contracting themselves, on which much of their capacity for motion depends; the contractile power of the flexor muscles is proportionably increased; and, in consequence, the foot is incapable of resuming its natural situation after the compression is removed.

Voluntary muscular motion, at least so much of it as relates to loco-motion, seems to depend upon this principle; every set of muscles which act upon any part in a peculiar manner are equal in power to their antagonists, and every action is performed by connecting volition with the muscles proper to produce it; the first action is counteracted by transfering volition to the antagonists in their turn, and, so long as it can be thus equally transferred from one to another, the natural form of the parts will be preserved, and their actions properly performed: but if, by any accident, the peculiar action of any muscle is impeded, the corresponding action of its antagonist is increased, and this inequality of action will continue to increase till the impediment is removed: upon due consideration it will therefore appear, that this effect is produced by the compression of the fœtus in utero, and the child is born with his feet distorted by contraction of all the flexor muscles of the foot.

A child, from the time of its birth, has inclination to move, though it possesses but very imperfectly the power of directing its motions; this is acquired by efforts continually repeated untilit begins to walk: if the parts are naturally formed and no accident intervenes to impede their motion, it then acquires the power of using its feet in the natural way; but if there is any impediment to their natural motion, it acquires the habit of moving as near to the natural as that impediment will admit: hence it is evident, that the cure will be more difficult in proportion as the attempt is deferred after the birth, because, in a patient of five or

fix months old, it will be neceffary to counteract the difeafed habitual action of the parts, as well as the original impediment.

If a child that has feet of this kind is fuffered to walk before a cure is attempted, it is evident that he muft place his feet in a pofition that will not bear him, without undergoing further alteration by fuftaining his weight: this muft produce additional deformity, by ftill further deviating from the natural relative pofition of the bones: though this circumftance may not render a cure impoffible in all cafes, it certainly will make it more complex, tedious, and uncertain, as in every one it may not be eafy to determine whether the pofition in which they are placed by it may not be fuch as will render a cure abfolutely impracticable.

If no attempt is made towards a cure before the bones of the foot are completely offified, it is certain that they will acquire fome deformity, and fo much of the difeafe as depends on deformity of the bones is, from that moment, irremediable: but circumftances certainly do exift in many cafes at this period, which may be alleviated fo far as to render the feet more ufeful than they would be if entirely neglected. If the difeafe is neglected until the bones are completely offified, and the patient fo far advanced in life as to have acquired fixed habits of ufing his feet, all attempts towards a cure muft be confidered as extremely abfurd, although he muft ftill have recourfe to affiftance from art, in order to enable him to move with any facility.

If this theory of the difeafe fhould be juft, it will appear that the cure muft be effected by extending the contracted mufcles, by increafing the power of thofe which have been diminifhed, and thus reftoring that equilibrium which always exifts between the flexor and extenfor mufcles in the natural ftate: this cannot be done by bending, twifting, or binding the feet in any particular pofition, which is all that has been attempted by the various methods that have as yet been recommended with a view to effect a cure; it can only be effected by applying, externally, an elaftic power fo adapted to the exifting ftate of the parts as to render the extenfor mufcles of the foot, with fuch affiftance, fomething more powerful than the flexors, without producing abfolute permanent extenfion. By proceeding in this manner, the feet will be ftimulated to action; that action will increafe the effect of the elaftic bandage applied, and accelerate the reftoration of the parts to their natural ftate.

Mr. Sheldrake contends, that if thefe ideas of the difeafe are juft, and the propofed method of treating it practicable, he is authorifed to draw the following conclufions à priori, viz.

1ft. That fpecies of club-foot with which children are frequently born may be perfectly cured, provided the cure is undertaken before the child begins to walk, though the difficulties to be

overcome will always be increaſed in proportion as the attempt is deferred after the birth.

2d. It is not impoſſible that many caſes may be perfectly cured, if undertaken after the patient has walked, though this muſt depend upon circumſtances, in particular caſes, which cannot be foreſeen, and therefore is not advanced as a general fact. It is certain, however, that in every caſe of this deſcription, the deformity may be greatly diminiſhed, and the feet rendered more uſeful than if totally abandoned to their fate.

3d. If the cure is not attempted till the bones are completely oſſified, it cannot be effected, and, in many caſes, the deformity cannot even be alleviated, though the exertions of the art may be neceſſary, to prevent it from being increaſed.

Mr. Sheldrake next adduces ſeveral facts which ſeem to juſtify the preceding concluſions. The following caſes are ſupported by the teſtimony of different medical gentlemen who had examined them.

Case I.—" On December 17th, 1793, I was deſired to ſee a child born with two club feet; he was then twenty-three days old. The gentleman who attended as accoucheur thought nothing could be done to aſſiſt, and therefore had abandoned him to his fate.

" Upon examination it appeared, that the gaſtrocnemii muſcles and tendo achilles of each leg were contracted as much as poſſible, and the foot drawn into the poſition it muſt always be placed in by that contraction of thoſe parts: the tibialii were likewiſe contracted, of courſe the inſide of the foot was hollow, and the outer convex; all the flexor muſcles of the foot were contracted, by which means the whole foot was turned downwards; in its general appearance, the foot was ſhorter and thicker than it naturally ſhould be, and placed in ſuch a direction, that if the child had been capable of ſtanding, the exterior and ſuperior parts of the metatarſal bones would have touched the ground; the diſproportion between the fore part of the foot and the heel was ſo great, that I was inclined to believe, contrary to the general idea I had formed of the diſeaſe, that the os calcis was ſmaller in proportion than it ſhould be; one of the feet was perfectly rigid, the other capable of being moved a little by bending it with the hand, and it had been obſerved that both had grown worſe ſince the child was born.

" Whoever is acquainted with the ſtructure of the foot, and action of its parts, will allow, that any attempt to cure this deformity, by bending the feet in any particular direction, muſt have proved injurious inſtead of beneficial; and if my ſyſtem of treating it was practicable, it could only be effected by applying an elaſtic power, and varying its action ſo as to produce extenſion

of the different contracted muscles alternately, thus proceeding by degrees till the feet were brought into their natural state."

"My first attempt was to produce extension of the gastrocnemii muscles and tendo achillés in each leg, since it is certain that if any part of the foot could be brought upon the ground, forming at the same time a proper angle with the leg, and the action of those parts preserved, the patient would at least be able to walk with facility, whatever deformity might remain in the foot; on the contrary, I had seen cases in which the form of the foot had been altered, and great hopes of success formed in consequence, but the patient ultimately left in a helpless situation because this circumstance had not been attended to, or no means could be used to effect it.

"With this view I applied proper elastic bandages, unbinding them every other day and binding them again, so as to increase the power in proportion to the progress I had made. By proceeding steadily in this manner for one month I succeeded completely in that point; if the patient had been of age to use his legs at this time, he would have stood upon the outer edge of the foot, and been perfectly capable of using his legs in that situation.

"The apparent deformity of the foot still remained the same; I therefore now applied bandages upon the same principle to produce extension of the tibialii muscles, and correct so much of the deformity as was occasioned by the contraction of them. After some time I endeavoured to produce the same effect upon the flexor muscles of the feet, directing my efforts alternately to them and the tibialii; by unremitting perseverance in this plan I so far succeeded, that on March 17th, three months after I first saw the child, I removed every part of the apparatus I had used to effect the cure, as the feet were now perfectly well formed, and not the least deformity remained."

In Plate XIII. are given three views (fig. 1, 2, 3) of one of the feet, drawn December 17th, 1793, before the use of any bandage: fig. 4, 5, 6, are three views drawn from the same foot, March 17th, 1794. Upon comparing them an accurate estimate may be formed of the effect that had been produced.

It will be evident, upon comparing these views, that as the whole alteration in the feet had been produced by extension of the contracted muscles in a very short space of time, those muscles which pass over the superior part of the foot could not have recovered their proper tone and action; all the soft parts on the top of the foot were in wrinkles, in consequence of the alteration they had undergone: it was, therefore, to be feared, if the feet were set at liberty, at this time, they would in some degree relapse into their former deformity, from the imperfect action they were

at prefent capable of. To prevent this, Mr. Sheldrake continued to keep the feet bound in their natural pofition by very light bandages till he thought no further attention, in that refpect, neceffary.

Case II.—A child born with two club-feet, by the advice of the late Mr. Middleton, had a perfon immediately employed to cure them. The fcrew fhoes, already mentioned, were ufed with little good effect, and afterwards leg irons on the common principle, which he conftantly wore till he arrived at years of maturity, when he was recommended to the care of Mr. Sheldrake.

" That I might be enabled," fays Mr. S. " to give him all poffible affiftance, I had his feet caft in plafter of Paris; thefe cafts are now in my poffeffion, and fig. 7, 8, and 9, in the plate, are three views of one of thefe models, from which a good idea of his fituation may be formed. The gaftrocnemii mufcle, and tendo Achilles in each leg are fo totally contracted, that his heel cannot be brought within four inches of the ground, nor is he capable of moving any part of his feet in a natural direction ; he is even incapable of ftanding erect without ufing very heavy irons, and half-boots, conftructed with falfe heels to fill up all the fpace between his heels and the ground; and, by thefe means, he is enabled, in fome degree, to bear the weight of his body, though, with the utmoft exertion, he cannot walk above a mile or two without being extremely fatigued.

" If this cafe is compared with many we continually fee that have been totally neglected, this patient's fituation is much the leaft enviable; they are capable of walking with facility, notwithftanding their deformity is greater than his; but he, in confequence of the conftant, though fruitlefs, attempts to relieve him, during the greater part of his life, has not acquired the difeafed action peculiar to fuch feet, nor any mode of action that approaches at all to the natural, and, in fact, he is fcarcely capable of moving at all."

This cafe certainly affords a ftriking contraft to the former, in which Mr. Sheldrake's inftruments were applied at a period when mechanical force may be expected to give permanent relief.

(2.) *Incurvation of the bones of the leg.*—Of thofe diftortions which take place after the birth, the earlieft in its appearance, the moft difagreeable in its confequence, and the moft difficult to cure, is curvature in the bones of the leg : it never appears until the child begins to walk ; often about that period, and not unfrequently at different periods after that time, it is faid, in general terms, to be occafioned by placing the child on his legs too foon ; this may fometimes produce fuch an effect, but by no means fo frequently as to be confidered a general caufe of the difeafe. As this falfe idea of the caufe has given rife to very improper

methods of treating patients so circumstanced, it may not be useless to make some enquiry into the nature of the disease, as that may lead to a more perfect method of cure, or, at least, to the prevention of the increase of some of its most disagreeable effects.

Without enquiring minutely into the nature of those substances of which the bones are formed, it will be sufficient to observe, that they consist of two distinct parts; an organised animal matter, from which they derive their form, and an earthy substance, deposited therein, to give that degree of strength which is necessary to enable them to perform their functions. In their progress from the birth to maturity, the central part of each bone is first formed, here its earthy part is first deposited, and proceeds gradually towards the extremities, until the whole is completed: hence it is, that the bones of the arms and legs are always most compact towards their central part, becoming more spongy and soft towards the extremities, and, of course, are there most liable to be acted upon with most effect by any cause that may diminish their strength or alter their form.

In order to eradicate the ricketty disposition from the constitution, it may be necessary to ascertain how far it is connected with scrofula, or is a distinct disease; or, whether the softness of bone in ricketty children is caused by abstraction or alteration of their earthy, or debility in their organised, part; but, as the intention of the present observations is only to obviate, to alleviate, or to cure, some of its mechanical effects, they will be confined solely to those alterations produced by this disease, which are in their nature likely to be counteracted by mechanical applications only. In conformity with these principles, it will be sufficient to observe, that the disease in question always appears in ricketty children; if that disposition comes into action before the child begins to walk, its first effect, which is enlargement of the extremities of the bones, frequently escapes observation; but when he begins to walk, his legs bend under his weight, in consequence of deficiency of strength in the bones; that effect must continually increase, unless assistance is provided to supply that deficiency until the producing cause is removed from the constitution: the curvature of the legs undoubtedly is produced immediately by the weight of the body acting upon them while they are unable to support it; but the cause of this is not in placing the child upon his legs too soon, for the same effect would have taken place at whatever period he began to walk; it is the effect of a peculiar disposition existing in the constitution, which must be eradicated before that effect can be removed; and as one of the means of doing this must be by constant exercise, it is necessary that he should be stimulated to action by every means, providing such assistance as shall at the same time prevent the curvature from in-

creasing, and diminish it as much as the nature of the case will admit

By this disease the bones of the leg are sometimes bent directly forwards, the front of the tibia projecting over the foot; at others outwards, forming an arch, with the most projecting part over the outer ancle; at others the reverse of this, and sometimes the curve consists of a mixture of two of these simple ones. A good idea of this disease may be formed from fig. 10, in the plate, which was drawn from a subject in Mr. Sheldrake's possession.

As this disease consists in positive curvature of some of the strongest bones in the body, it is in its nature more difficult to cure than any other species of distortion; and, by the common methods of treating it, little good has been done.

If we suppose a leg bent like the figure in the plate, to such an extent, that a line drawn perpendicular from the inside of the knee to the ancle is one inch distant from the most inflecting part of the tibia; if, from the application of instruments, it is prevented from growing worse, or if, from any alteration in the constitution, the tendency to curve is effectually checked, and the patient arrives at maturity, the leg will be nearly twice as long as it was when the curvature took place: by thus doubling the length of the curve, its apparent diameter will be diminished one half, notwithstanding its actual deviation from the perpendicular line has not been altered in the least; and as this effect only takes place in those cases where the tendency to distortion was checked very early, and the curvature but trifling, it is not difficult to conceive that an inattentive or prejudiced observer may easily mistake such apparent diminution for actual extermination of the disease.

Whoever considers the structure and form of the bones, the alteration that is produced in their substance by disease, and the manner in which they are affected by gravitation of the superincumbent parts acting mechanically upon them, will easily conceive why no degree of deformity that once exists in the bones of the leg can be removed without mechanical assistance.

It has been made a question, whether softness of the bones in ricketty children is caused by the abstraction or alteration of their earthy, or debility in their organized, parts: leaving the discussion of this question to those in whose immediate province it is, it will be sufficient to observe, on the present occasion, that the effects of rickets always appear first in the softest part of the bones; as the legs, besides what they undergo in common with the other bones, suffer from the pressure of the body, whose weight they carry, they, particularly at the lower part of them, are always more bent than any other.

It must be evident, that so long as the disease which occasioned

the deformity in queſtion exiſts in the conſtitution, its effects cannot be remedied, although a leg diſtorted, from this cauſe, may be prevented from growing worſe, at whatever period the proper means may be applied: it is even certain, that removing the original diſeaſe will not remedy the curvature it has occaſioned in the legs; for, whatever may have been the pre-diſpoſing cauſe, its ultimate effects have been produced by means merely mechanical; the preſſure, from weight of the body, has cauſed the legs, previouſly weakened by diſeaſe, to bend, and the ſame preſſure will effectually prevent them from becoming ſtraight, unleſs mechanical means are uſed to ſecond the efforts of nature. There is even reaſon to believe, that when the legs have been bent beyond a certain point, the weight of the body alone will continue to increaſe the curve, even after the ricketty diſpoſition has totally ceaſed.

If a general opinion may be given upon caſes of this deſcription, it may perhaps be ſaid, with propriety, that all may be prevented from growing worſe from the time they are aſſiſted by proper mechanical applications; that many may be much alleviated, and not a few perfectly cured, by the ſame means. In giving this opinion, however, it muſt not be underſtood that this is to be eaſily effected, or even to be done at all by the methods commonly purſued. Even with the beſt methods that can be adopted, the progreſs of a cure muſt neceſſarily be moſt tedious, and the event uncertain; ſo much ſo, that Mr. Sheldrake does not heſitate to ſay, that this, of all diſtortions in the legs of children, is the one leaſt likely to terminate in a favourable manner.

(3.) *Inflexion of the Knees.*—This diſeaſe, as it may be produced by every cauſe that will occaſion debility, is perhaps more common than any other diſtortion to which the legs of children are liable; fortunately for the ſufferers, however, it is more certainly curable than any of them, provided due attention is exerted in making uſe of the proper means.

In its worſt ſtages it frequently happens, that the bones of the leg or thigh are diſtorted, ſometimes, perhaps, from the circumſtances of the diſeaſe, but much oftener, however, from the injudicious uſe of leg-irons badly made; but, in its early ſtages, it is only a diſeaſe in the ligaments of the joints occaſioned by debility.

This is the general cauſe of the diſeaſe; its immediate cauſes in the many children that are afflicted with it are too numerous to be fully particularised; every ſpecies of general debility, by diminiſhing the power of the legs to ſupport the weight of the body and maintain their own natural poſition, will produce it; every accident that gives the limbs a decided tendency to any particular poſition will occaſion it; but, as an attempt to particulariſe all theſe accidents and other circumſtances would be, in

fact, to give the hiſtory of every inſtance of the diſeaſe; it will be ſufficient here to mention the fact, leaving it to particular option to apply it in particular caſes.

The common idea is, that the knees only are bent; but whoever has a juſt idea of the form and connection of the bones between the pelvis and ſole of the foot muſt be ſenſible that the knees cannot be bent ſo far from their natural ſituation without occaſioning a proportionable diſtortion in every other joint from the pelvis downwards. Upon viewing the manner in which the femur is connected with the pelvis, and the direction it takes from thence to its juncture with the tibia, as well as the natural poſition of the leg, it will be eaſy to conceive why, when the knee-joint is affected by weakneſs, from whatever cauſe, it ſhould bend inwards, and the feet in conſequence be removed further from each other than when in their natural ſtate; this ſometimes happens to ſuch an extent, particularly when long neglected, that in ſome caſes the feet have been found twelve inches a-part, when the knees have been cloſe together.

In ſome caſes they have been known to bend outwards; but this is a different diſeaſe, compounded of this and incurvation of the bones of the leg; when they begin to bend outwards, the natural connection of the parts demonſtrate why the knees muſt take the ſame direction. A much more troubleſome ſpecies of this diſeaſe is where the bones of the leg bend outwards and the knees in: though this diſeaſe may ſometimes take place from a combination of the cauſes already aſſigned, it is more frequently produced by the injudicious uſe of leg-irons.

In the ſimple inflection of the knees, it is commonly thought that the knees only are affected; it is allowed, indeed, that the ankles of the ſame patient are ſometimes affected in a ſimilar manner, but a ſeparate cauſe is generally aſſigned for this; it is, however, certain, that the motions of the hip, knee, and ankle joints are ſo dependant upon each other, that no one of them can be diſtorted without producing diſtortion in the reſt: it is equally certain, that all will be proportionably affected in whichever the diſtortion firſt appeared. This obſervation may be carried ſtill further; for, as conſtitutional debility is frequently a remote cauſe of theſe diſtortions, it moſt commonly appears that both legs are affected, though not equally: hence it has often happened, that when one leg has been properly ſupported, the other has manifeſtly become worſe; from which it is to be inferred, that although diſtortion of one leg does not, of neceſſity, follow the other, it ſo frequently happens, that it is always adviſable to pay ſome attention to both, in order to check this effect as ſoon as it begins to take place. Excepting the debility or other accident that occaſioned the weakneſs in the joint, all the effects of this

difeafe are to be accounted for upon mechanical principles only, and can only be remedied by mechanical means: the original difpofing caufe to be always treated as a feparate difeafe.

The intention of cure in thefe cafes is to place the limb in its natural pofition; or, where that cannot be done, to reduce it as foon as may be into that pofition, and retain it there till fuch an alteration has taken place as will preclude the probability of a relapfe. The means which have been ufed to effect this are reducible to two kinds: 1ft. By means of fhoes with unequal foles, forcing the limb into its natural ftate; 2dly. Effecting the fame purpofe by means of leg-irons. Mr. Sheldrake offers a variety of reafons why neither of thefe means can be relied on; but none of the inconveniences juftly attributable to the common machinery employed can be produced by the elaftic bandages he has fubftituted in their ftead. Thefe are always acting on the limb in its natural ftate, whether in motion or at reft, and every motion of the limb increafes the action of the bandage, thus enabling the patient to take more exercife than he could take without it; and by this means, in every fenfe, accelerating the cure.

It is evident, that a cure can only be effected by placing the diftorted limb (from the pelvis to the foot) in a fituation as near to the natural ftate as its circumftances will admit, taking care that its natural motions fhall be performed, without allowing it to deviate from the proper direction; to this muft be added a power that fhall draw the limb perfectly into its natural ftate. This is effected by fubftituting fprings, properly adapted, for the ftrait iron ufed in the old fyftem: in order to do this, the natural and difeafed action of the parts fhould be well underftood; the compreffion produced by the bandages ufed, caufes the fpring to act in drawing the parts into their natural fituation, and, by progreffively tightening thofe bandages, the effect of that action may be progreffively increafed to any degree required: this effect will likewife be increafed by the neceffary motion of the limb increafing the action of the fpring.

CHAP. IX. OF THE WATERY-HEAD.

THE name of Watery-Head is popularly given to the difeafe called Hydrocephalus. We have already (in Vol. II. p. 293) given a full account of this difeafe, and the opinions of the moft eminent of the faculty as to the moft fuitable method of treating it. We are neverthelefs induced to refume the fubject in this place, for the fake of introducing to the reader's notice the following cafe, treated by an ingenious phyfician in the north of England, pledging ourfelves, at the fame time, for the authenticity of the facts.

"May 4th, 1802.—Mary Porter, a child aged four years, complains of violent acute pain in the head, chiefly at the vertex, shooting through the temples. She is observed frequently to apply her hand to those parts, and to cry out 'Oh, my head!' The face is commonly flushed, though sometimes very pale. The eyes appear somewhat protruded and suffused, and are very impatient of light. The pupils contract on the approach of a lighted candle, and the axes converge. Constant drowsiness, except when interrupted by convulsive contractions of the limbs. The pulse is very frequent, hard, and regular. Tongue white but moist. She expresses a great desire for cold liquids. Skin hot and dry—occasional vomiting, soon after taking food. The bowels very torpid. She was first seized on the evening of the 1st of May with sudden and excessive pain in the head, and passed the night in constant agitation; but no further account can be procured of the accession or progress of the symptoms. Before the present seizure the child has been frequently attacked with slight illness; but when in health was lively, playful, and extremely inquisitive.

(No. 50.) ℞ Pulv. jalap. gr. vj.
Calomel. gr. ij. M. f. pulv. stat. sumend. Statim applic. hirud. iij. tempor. utraque. Capiti raso empl. cantharid. amplum.

"To be kept cool with the head raised, and to take toast and water for drink.

"5th. 9 A. M. Physic produced one stool only; five leeches fixed, but bled freely. No diminution of the symptoms.

"8 P. M. The child has been less drowsy this afternoon; but now the stupor and inclination to be in bed are as great as on the 4th. The pain in the head is excessive, great intolerance of light, and the pupils now dilated. Is seized with occasional convulsive motions of the limbs. Pulse, skin and tongue, as before. Blister has risen well.

(No. 51.) ℞ Aq. ammon. acet. ℥iv.
Vin. antimon. gt. xv. M. cap. coch. j. infant. cum pari quant. aq. puræ.
Statim fric. femora cum ung. hydrarg. fort. gr. xv. & rep. mane sequent.
Bibat ad libitum decoct. tamarind.

"6th. 9 A. M. The ointment was rubbed into the thighs last night and this morning. Restless in the night and a little delirious. Still complains of acute pain in the head, and the face much flushed. Dilatation of the pupils not increased. Pulse as before. Makes water freely, but has had no stool since the physic. The mixture excites vomiting.

Intermit. mistura.

(No. 52.) ℞ Pulv. jalap. gr. viij.
Calomel. gr. iij. M. f. pulv. statim sumend.

(No. 53.) ℞ Pulv. fol. digital. gr. i.
Calomel. gr. ij.
Conſ. Roſæ q. ſ. f. pil. vj. cap. j. mane & nocte incipiens hora 7ma veſpert.

Fiat fonticulus ex part. veſic. ope ung. canth. Contin. ung. hydrarg.

" 7 P. M. The purgative has produced no effect. Much coma, frequent ſtarting, and application of the hand to the head, but there is leſs intolerance of light. Pulſe one hundred, and hard. Bliſter diſcharges freely.

(No. 54.) ℞ Decoct. pro. enem. ℥iv.
Nat. vitriol. ℥ſs.
Tinct. ſennæ ʒiij. M. ft. enema ſtat. injicend.
Statim appl. hirud. No. ij. temporibus utriſque.
Rep. cætera.

" 7th. 9 A. M. Has had four copious evacuations from the clyſter, and the leeches bled freely. Pulſe ſofter and leſs frequent. Face leſs fluſhed. Screamed ſeveral times in the night, but this morning has had ſome refreſhing ſleep. There is ſtill a conſiderable degree of coma, but when rouſed is perfectly ſenſible. Has called for bread and milk this morning. Has from her firſt ſeizure voided her ſtools and urine involuntarily. The bliſter does not diſcharge. Gums not affected from the mercury.

Appl. empl. canth. pone aures utraſque. Rep. pil. digital. ter in die. Contin. ung.

" 7 P. M. About mid-day the pain returned with great ſeverity, and continued for one or two hours. Since that time the child has been quite eaſy, cheerful, and free from ſtupor. There is ſome intolerance of light, and the pupils contract on the approach of a lighted taper. The pulſe, though ſtill hard, is conſiderably ſofter and leſs frequent than laſt night. Still vomits after taking food, and has rejected the pill given at noon. Has had a natural ſtool, and voided much urine. Gums not yet affected.

Contin. pilul. & ung. hydrarg.

" 8th. 9 A. M. Has ſlept ſoundly without any ſtartings or ſcreamings, and has only vomited once in the night. This morning found her aſleep, the reſpiration free and eaſy, and the pulſe not more than one hundred and twelve, and ſofter. The ſkin is ſtill rather hot. She makes no complaint except from the bliſter. The urine is copious, and ſhe calls for the pot when it is wanted, but has had no ſtool ſince yeſterday at noon. Refuſed to take her pill this morning.

Rep. unguentum, & pilul. ter die.

" 7 P. M. Has ſlept well through the day, makes no complaint of her head. Pulſe one hundred and twenty. Skin not dry. Some thirſt. Urine vented in natural quantity and of a pale colour. No ſtool.

Rep. enema purgans, &c.

" 9th. 9 A. M. Slept pretty ſoundly through the night, but has had occaſional ſtartings, and once ſcreamed out. Does not complain of pain in the head, but the intolerance of light continues. Has not vomited after her food ſince yeſterday. Although awake and ſitting up, appears heavy and dull. Pulſe one hundred and twenty, and ſoft. Face not fluſhed, but there is ſtill ſome heat on the ſkin, though ſhe does not complain of thirſt. Has made but little water. The clyſter produced one large ſtool. Gums not affected.

Statim applic. empl. canth. parti capitis poſteriori. Omit. pilul. &c.

(No. 55.) ℞ Pulv. fol. digital. gr. ij.
Calomel. gr. viij.
Syr. q. ſ. ft. pil. xij. cap. j. ter in die.
Aug. ung. hydrarg. ad ℈j. mane et nocte.

" 10th. 7 P. M. Little or no alteration in the ſymptoms. The bliſter has riſen well. Has complained of ſome griping in the night, and was therefore ordered to omit the pill at noon. Has taken milk and broth without vomiting, and has ſat up an hour or two to-day, though ſhe appeared dull and heavy, and the head was obſerved to incline to one ſide. When in bed ſhe is with difficulty rouſed from her ſtupor. Makes no complaint of her head; no ſcreaming, ſtarting, or ſtrabiſmus. The pulſe more frequent and hard. Skin hot, but a little moiſt. Urine ſcanty. Had a natural ſtool at noon. No affection of the mouth.

Contin. medicamenta.

" 11th. 9 A. M. The child has been griped in the night and purged twice. Makes no complaint of her head. Has ſat up two hours this morning, and appears more lively than yeſterday. Pulſe one hundred and twenty, and ſoft. Skin moderately cool. Takes milk and broth freely, and has made more water, which is high coloured.

Omit. pilulæ.

(No. 56.) ℞ Pulv. ſcillæ. exſiccat. gr. ij.
Digital. gr. ij.
Calomel. gr. v. Syr. q. ſ. ft. pil. viij. cap. j. mane and veſperi. Contin. alia.

" 12th. 9 A. M. The child has been free from head-ach. Has ſat up the greater part of yeſterday, and appears more lively. The pupils contract freely. Pulſe one hundred and twenty. Gums not affected. Takes food freely. Has had two natural ſtools with conſiderable griping. Complains of pain from the bliſter.

" 13th. No return of head-ach, ſcreaming, or convulſive motion of the limbs. Sat up all yeſterday, and complains of nothing except pain from the bliſter and gripes. Has had three looſe ſtools. Pulſe one hundred and eighteen. Appetite good. Flow of ſaliva in the night.

Intermitt. ung.

(No. 57.) ℞ Syrup. vulgaris ℥j. Tin. opii gt. xxv.
Cap. coch. infant. urgent. torminibus.

" 14th. No return of head-ach, but had appeared more drowſy yeſterday afternoon. Only one ſtool ſince ſhe took her phyſic. Says the bliſtered ſurfaces are very ſore, and diſcharge much. Appetite good: pulſe as yeſterday. Eyes natural.

Intermitt. ſyrup. anod.
Rep. ung. hydrarg. ℈j nocte maneque.

" 15th. As yeſterday. Continuet. ung. hydrarg.

(No. 58.) ℞ Rad. gentian. incis. ʒij.
Cort. aurant. ſicc. ʒj. infunde in aq.
bull. ℥viij. horæ per quadr. ſpatium.
Colat. adde tin. colomb.
Sp. æther. nitroſ. āā ℥ſs. m. cap. ʒiſs. ter in die.

" 17th. Complained a little of head-ach yeſterday, and has vomited once or twice, but the pupils contract freely on the approach of light, and there is no ſtrabiſmus. The face pale, the ſkin moderately cool and moiſt. Pulſe frequent and hard, tongue white and moiſt; no appetite or thirſt. Has had two or three ſtools daily, and makes water freely. The bliſtered ſurfaces are healed. The breath is fœtid, the gums white but not tumid, and ſhe complains of ſoreneſs in the root of the mouth, but no ptyaliſm can be perceived.

Rep. ung. et miſtura amara.
Applic empl. cantharid. ampl. capiti.

" 18th. The bliſter not yet riſen; makes no complaint of her head; face pale; pulſe frequent and hard; makes urine and perſpires freely; two ſtools with griping; no appetite; mouth ſore.

Cap. pulmentum vinoſum ad libitum. Contin. alia.

" 19th. Bliſter has riſen well; three ſtools with conſiderable griping, but the mouth is not ſore; makes no complaint of her head; appetite bad.

Omitt. ung. hydrarg.

(No. 59.) ℞ Cretæ præp. ʒiſs.
Pulv. gum. arab. ʒij.
Tinct. opii gt. xxx.
Aq. cinnamom.
Aq. font. aa ℥iij. m. cap. ℥ſs. poſt ſingul. alvi purgation. Contin. mixt. amar. et pulmentum.

" 21ſt. Has had one ſtool ſince laſt viſit; continues to perſpire freely; the appetite returns and the child appears more lively.

Contin. miſtura et pulmentum.

" 28th. Perſpirations continue, though not ſo profuſe as before;

no return of pain in the head, or any other unpleasant symptoms. The functions gradually returning to their natural healthy condition.

"June 8th. The child appears perfectly recovered, although she has not quite regained her wonted flesh and strength."

To the foregoing account, in which the excellently *well-timed* application of mercury cannot but strike every practitioner of experience as a remarkable feature in this valuable case, we have to add, that the patient continued in health in the following December, and there is no reason to doubt but the cure is permanent.

CHAP. X. VACCINATION.

WE have treated, in a former volume, fully, of the disease for which vaccination is an effectual preventive. The process of applying this wonderful prophylactic, more properly belongs to this place; since the earliest periods of life are the best suited, in every respect, for its introduction. The novelty no less than the importance of the subject, will render us excusable for introducing it with some preliminary matter.

SECT. I. *Sketch of the* HISTORY *of the* COW-POX.*

The task of alleviating the various diseases to which the human species are liable, has engaged the serious attention of the most learned philosophers and physicians in all ages. But while they have assiduously laboured in the vineyard of therapeutics, they have left that better part of medical science, *prophylactics*, in a state of inferior cultivation; whether from the greater difficulty of the undertaking, or from the little encouragement given to such attempts, by the slow and unwilling gratitude of mankind, it may not be easy to determine.

We are not insensible of the merits of our ancestors, or of the value of the remedies which they have suggested; but even those merits, and those remedies, must yield to the merits and the preventives of a HAYGARTH and a JENNER. If the advantages conferred on the world by the former are great, and great we must allow them to be, what estimate can be formed of our obligation to the latter? It was reserved for him to discover a prophylactic, which will exterminate the most fatal pestilence from the face of the earth, blunt the shaft of death, and ameliorate the condition of man.

* We are indebted, for this chapter, to Mr. RING, a gentleman whose labours, in establishing the practice of vaccination, and defending it against all its adversaries, are well known to the public.

The celebrated Boerhaave, treating of the ſmall-pox, ſays, "There is reaſon to hope, a ſpecific may be found to correct this malady; and we are impelled to ſeek for ſuch a ſpecific, by the vaſt advantage that would thence accrue to mankind."—This hope is at length realized; a ſpecific is diſcovered for that diſeaſe, which has been the ſcourge of Europe for a thouſand years, and committed ſuch dreadful ravages in every quarter of the world.

This object, on which ſo great a portion of human felicity depends, was brought forward to public notice by Dr. Jenner, in the year 1798, in a work entitled, "An Enquiry into the Cauſes and Effects of the Variolæ Vaccinæ, a Diſeaſe diſcovered in ſome of the Weſtern Counties of England, particularly Glouceſterſhire, and known by the Name of the Cow-Pox."

Since that time, Dr. Jenner has publiſhed two other tracts on the ſame ſubject; one entitled, "Further Obſervations on the Variolæ Vaccinæ," the other, "A Continuation of Facts and Obſervations relative to the Variolæ Vaccinæ." Theſe three tracts have ſince been republiſhed in one volume.

The author firſt enquires into the origin of the cow-pox; which he aſcribes to a diſeaſe of the horſe's heel, called the *greaſe*. The matter produced in this diſorder, being applied to the teats of the cow, by a man who has been dreſſing the heels of a horſe, and neglected thoſe precautions which cleanlineſs requires, is ſuppoſed to be the cauſe of the diſtemper in queſtion.

This, Dr. Jenner obſerves, is not only the popular opinion in Glouceſterſhire, but he has never been able to hear of a ſingle well-authenticated caſe, where the genuine cow-pox ever occurred, in which it might not be traced either to this ſource, or to an infected ſervant, or infected cow, lately introduced into the farm. He moreover obſerves, that in the county of Cheſter, where men are not in the habit of milking, the diſeaſe is utterly unknown: and, to ſtrengthen this argument, he obſerves, that farriers are in general leſs ſuſceptible of variolous infection than other people. Of this he brings abundant proof, derived from reſpectable authorities; and we are aſſured, that he has ſince met with additional evidence, of the moſt ſatisfactory kind, on this head.

Experiments have been made, with a view to determine this point, by Dr. Woodville, Profeſſor Coleman, Mr. Simmons of Mancheſter, and others; who have repeatedly inoculated cows with the matter of greaſe, but to no purpoſe. Mr. Tanner, a veterinary ſurgeon of Rockhampton in Glouceſterſhire, has, however, produced the diſeaſe in different inſtances, by removing a ſcab, and applying the dark-coloured fluid, iſſuing from the recent fiſſures on the heels of a horſe, to that broad ſurface. Vaccine matter, thus generated, has been found ſimilar in all its effects to that which is furniſhed by the cow-pox, when caſually excited.

What tends greatly to corroborate the opinion of the cow-pox

originating from the greafe, is, that many perfons have obferved a puftulous difeafe, occafioned by the application of the virus of the horfe's heel to the human fkin; particularly Mr. Lupton of Thame, and Mr. Rankin of Eaftbourne. Thefe puftules were elevated at the margins and depreffed at the centres; and in all refpects analogous to the cow-pox.

But it is unneceffary to confirm by collateral and circumftantial teftimony, what refts on the firm bafis of pofitive evidence, and is proved by inconteftible facts. This is acknowledged, on the prefent occafion, by the authors of the Bibliotheque Britannique. From Dr. De Carro we learn, that in the duchy of Holftein, where this difeafe prevails, and where children are fometimes inoculated with the cow-pock for the prefervation of their beauty, men frequently milk cows; and horfes, when affected with greafe, are frequently put into cow-houfes, and configned to the care of women. Hence there is a double facility of communicating the diftemper to the cow.

Dr. Sacco of Milan, who has difcovered the cow-pox in Lombardy, and tranfmitted to England matter which has proved fuccefsful, and which is acknowledged to be the virus of the genuine difeafe, is not inclined to attribute its origin to the greafe: but, as Dr. Huffon of Paris juftly obferves, the frequency, and the concurrence of the two diftempers, in the neighbourhood of Milan, ferve rather to confirm the opinion of Dr. Jenner, that they both fpring from the fame fource.*

* Since the preceding obfervations were written, Dr. Loy of Aiflabie, in Yorkfhire, has publifhed an account of fome experiments made with the matter of greafe; by which it appears, that this matter is, in certain cafes, endowed with a perfect antivariolous power, without being tranfmitted through the medium of the cow.

Dr. Loy is of opinion, that there are two fpecies of greafe; of which one only poffeffes this property; which, he fays, is attended with conftitutional indifpofition, and a general eruption, the other fpecies being merely local.

With the matter of the former, Dr. Loy excited the genuine puftule in the nipple of the cow, by means of inoculation with a lancet. This is worthy of attention, fince it is the firft inftance in which that operation has proved fuccefsful. Thus modified, the virus produced the genuine vaccine puftule in the human fubject. When transferred immediately from the horfe to the human fubject, in feveral inftances, the puftule which it excited was attended with a more violent inflammation than that which accompanies the vaccine veficle, whether this veficle be produced immediately from the cow, or indirectly, by matter taken from the human fubject.

Dr. Loy had recourfe to the experimentum crucis: he inoculated with active variolous matter thofe who had been previoufly inoculated with the matter of greafe, but in vain. Thus Dr. Jenner's opinion of the origin, as well as of the efficacy of vaccine matter, ftands confirmed.

SECT. II. *Of the* VACCINE AFFECTION *as connected with that Diseafe in the* COW.

1. This difeafe appears on the teats of the cow in the form of blue vefícles, furrounded with inflammation. The animal is indifpofed, and the fecretion of milk is leffened.

2 Vefícles fimilar to thofe on the nipples of the cow, but lefs blue, appear on the hands of the milkers; attended with febrile fymptoms, and frequently with tumors of the axillæ. Vefications of the fame kind may alfo take place in any other part, in confequence of inoculation by the fingers of the patient, impregnated with virus. Thefe vefícles, produced by the cafual infection, whether in the human fubject or the brute animal, often degenerate into troublefome ulcerations, unlefs proper applications be employed. Thofe in common ufe are folutions of cuprum vitriolatum and zincum vitriolatum. Saturnine applications, however, will in all probability be found preferable.

3. Morbid virus of various kinds is capable of exciting a difeafe bearing fome refemblance to that already defcribed: but the diagnoftics laid down by Dr. Jenner are fufficiently clear to enable us to diftinguifh the maladies from each other. The genuine cow-pox confifts of *vefícles*; the fpurious of *puftules*. Thefe have neither the bluenefs, nor the central depreffion, which characterize the former; nor are they fo infectious, nor fo likely to be followed by obftinate ulcers, as the genuine kind.

4. The fpurious cow-pox originates from common inflammation, whether occafioned by neglect of milking, luxuriant food, the fting of an infect, or any other caufe. This affection is but rarely communicated to the hands of the milkers; and only deferves to be mentioned, on account of the poffibility of its being miftaken for the genuine fpecies of the cow-pox. It is, indeed, fo benign, that in many places, where it is well known, no idea is entertained of its being contagious; and it may reafonably be be doubted, whether it really is fo, till the matter which the puftules contain has undergone a decompofition.

5. What renders the virus of the genuine cow-pox fo extremely fingular, is, that "the perfon who has been thus affected, is for ever after fecure from the infection of the fmall-pox; neither expofure to the variolous effluvia, nor the infertion of the matter into the fkin, producing this diftemper."

6. Whether the cow-pox in the brute animal changes its appearance with the climate, or whether different fpecies of that diftemper are endowed with an antivariolous property, remains to be determined. One thing is certain, that a difeafe varying in fome refpects from that which prevails in England is accurately defcribed by Dr. Sacco, of Milan; and that virus, furnifhed by

the ſame, has proved an effectual preventive of the ſmall-pox, both in the hands of Dr. Sacco, and in thoſe of our Engliſh inoculators; among whom it is now very widely diſſeminated, and it is alſo tranſmitted to almoſt every part of the globe. Dr. Sacco informs us, that the cow-pox is a malady, which till the preſent time belonged almoſt ſolely to the veterinary department; and that ſcarcely a ſingle veterinary writer gives a proper deſcription of it, or a proper diagnoſis. It is repreſented by Dr. Sacco as conſiſting of little tumors, depreſſed in their centres, of a ſhining appearance, and reddiſh brown colour; containing a thin inodorous fluid, which thickens and forms an incruſtation. Theſe incruſtations become of a deep red; and the cows ſuffer great pain at the time of milking. This diſtemper, which is not very commonly obſerved, is attended with diminution of appetite, a continual rumination without any materials in the mouth, and a motion of the lips reſembling that of a perſon playing on a flute. The milk is leſſened; the eye downcaſt. There is a ſlight ſymptomatic fever. The puſtules are ſeated on the nipples and the lower part of the udder: ſometimes, but rarely, a few appear about the eyelids and noſtrils. This ſpecies of diſtemper, Dr. Sacco obſerves, is contagious to ſuch a degree, that if one cow contracts it, in the courſe of ten days the whole herd will be infected.

7. That the genuine cow-pox is a ſecurity againſt the ſmall-pox has been a popular opinion in many of the dairy counties of England, and in ſome parts of Ireland, from time immemorial. But many perſons entertained doubts concerning the ſuppoſed prophylactic virtue of the vaccine virus, from ſeeing a number of apparent exceptions. Theſe doubts it was reſerved for Dr. Jenner to diſſipate. He has remarked, that virus taken from a vaccine puſtule, or ulcer, after a certain period no longer poſſeſſes an antivariolous virtue: that it may, indeed, produce a ſpurious puſtule, but not the perfect diſeaſe. That genuine vaccine virus, taken at an early period, is capable of rendering the human body inſuſceptible of the ſmall-pox, is an axiom as well eſtabliſhed as any one in the whole circle of medical ſcience.

8. That this antidote againſt the ſmall-pox is not of a mere temporary nature, as ſome have abſurdly ſuppoſed, appears evident, not only from analogy with the ſmall-pox, but alſo from the moſt reſpectable authorities. Satisfactory proofs of this appear in the writings of Dr. Jenner, and others who have treated of this diſeaſe*. One inſtance, however, we ſhall adduce. A man who is now living at Berkeley had the cow-pox fifty-five years ago. Since that time, he has been repeatedly inoculated with variolous matter, and expoſed to the natural infection of the ſmall-pox, but in vain.

* They are amply ſupplied in Mr. Ring's Treatiſe on the Vaccine Diſeaſe.

9. Similar experiments have been made on thoſe who have undergone vaccine inoculation. Theſe have repeatedly been inoculated with recent variolous matter, at every different period, from the firſt introduction of the practice to the preſent time; and have alſo been put to the teſt of expoſure to the natural infection; but to no purpoſe.

10. The practice being now eſtabliſhed on a ſure foundation, it may not be improper to enquire more particularly into the merits of Dr. Jenner's diſcovery. That the preventive property with which the cow-pox is endued was, in ſome meaſure, previouſly underſtood, is a truth admitted by Dr. Jenner himſelf. It is to him, however, we are indebted for the diſcovery, that virus taken from the vaccine veſicle in the human ſubject is poſſeſſed of preciſely the ſame qualities with that derived from the cow; and that it never degenerates, in conſequence of repeated tranſmiſſions, in the human ſubject.

SECT. III. *Of the* VACCINE AFFECTION, *communicated by* INOCULATION *to the* HUMAN SUBJECT.

1. If the Suttonian mode of inoculating be adopted, which inflicts no larger a wound than what is indiſpenſably neceſſary in order to lodge the virus under the cuticle, a ſmall red ſpeck, attended with a trifling degree of elevation, will appear, commonly on the third or fourth day, but ſometimes at a much later period, as in variolous inoculation. In a day or two more a veſicle begins to riſe, which gradually increaſes till the eighth or tenth day, and ſometimes for a longer period. This veſicle is ſurrounded with an areola, which ſeldom becomes extenſive before the ninth or tenth day; a circumſtance neceſſary to be remembered, ſince it is one of the principal diagnoſtics between the genuine and the ſpurious, or imperfect, puſtule. The central depreſſion is another important characteriſtic of the true diſeaſe. The areola commonly begins to ſpread with rapidity about the ninth day; and on the tenth or eleventh arrives at its utmoſt extent. It then is, in general, about an inch or an inch and a half in diameter, with the circumference nearly of a circular form, but ſhooting out into points, and with an edge that is rather elevated and clearly circumſcribed. Sometimes, either from friction, or extreme irritability of the habit, the inflammation becomes much more extenſive. This may alarm perſons who are not converſant in vaccine inoculation, and render it prudent to uſe a ſaturnine application. The moſt experienced inoculators, however, affirm, that this is ſeldom or never neceſſary; and that all the inflammation, terrifying as it may appear, will ſpontaneouſly ſubſide.

When the areola is complete, the centre of the pustule begins to turn brown; and a scab is gradually formed, which in colour greatly resembles a tamarind stone. It is sometimes almost black; and commonly retains the depression in the centre. The scab is sometimes perfectly formed in four or five days from its first appearance; but its complete formation is occasionally pretracted to a much later date. It adheres firmly to the cutis; and, if not separated by violence, will remain for ten days or a fortnight.

Instances have been known, or are said to have been known, in which a genuine pustule, perfect in every respect, has appeared in those who have had the small-pox or the cow-pox. This, however, is a very rare occurrence: but it is not very uncommon to meet with a pustule, in persons of that description, when subjected to vaccine inoculation, which resembles the regular pustule in its slow rise, in its central depression, and in the limpidity of the fluid it contains. It is, however, less circular, and not so large as the regular pustule. It seldom increases after the seventh day. The fluid it contains has been known to excite the genuine vaccine pustule; but ought not to be depended on for that purpose. This is not a spurious disease, but rather the genuine one of a diminutive size: it has, therefore, with some degree of propriety, been called the imperfect pustule. Among other characteristics distinguishing this from the spurious pustule, the dark colour of the scab that supervenes ought not to be omitted. This exactly resembles the dark mahogany colour of the incrustation that succeeds the perfect pustule.

2. When a pustulous disease is excited in the human subject, by virus received from a pustule in a cow, which never was of the genuine species, or which had lost its specific quality, the disease thus excited is denominated the *spurious cow-pox*. It differs essentially from the true cow-pox. It is not vesicular, but pustulous. The pustules want the circumscribed areola which attends the genuine distemper. They likewise want the central depression; and the matter which they contain is purulent. This distemper sometimes affects the hands and feet, the face, the breast, and other parts of the body. It is customary to call any kind of pustule that is occasioned by vaccine inoculation in the human subject a spurious pustule: it is, however, improper to term such an affecton a spurious vaccine pustule, unless it can be proved to owe its origin to some specific virus derived from the cow.

3. The genuine vaccine disease in the human subject is local, and always an inoculated disease. It is now and then communicated to other parts from the pustule on the arm, by the nails of the patient. It may reasonably be presumed, that a constitutional fever always accompanies it; but this is not always perceptible: a circumstance of little moment, since a regular pustule, whether

attended with evident fever or not, is found to be an equal preservative against the small-pox.

4. The vaccine disease is occasionally attended with an eruption resembling the red gum, the tooth rash, or the nettle rash; but never with a truly pustulous eruption, unless it be complicated with some other disease, such as the small-pox. A number of errors were committed on the first introduction of the practice, which time and observation have now corrected; and Dr. Jenner's opinion seems to be generally adopted, namely, that the vaccine disease is, as far as regards a specific eruption, entirely local.

5. The vaccine fluid may be taken for the purpose of inoculation as soon as the vesicle appears, which is seldom before the fourth or fifth day. From that period it may be taken till the areola is complete; but it is less to be depended on after the areola begins to be extensive.

6. Should an inflammation appear in the neighbourhood of the puncture within twenty-four hours, quickly producing suppuration, we have reason to believe, that the system rejects infection. In persons who have had the small-pox, this is no uncommon occurrence: but in whatever case it happens, we ought to avoid taking matter from such a pustule for future inoculations; and never to pronounce the patient secure from future infection either of the small-pox or of the cow-pox, without some additional proof.

7. When matter is taken for inoculation, very minute punctures ought to be made in the edge or most elevated part of the vaccine vesicle, and time should be allowed for the fluid to ooze out. The point of the lancet, being then charged with this fluid, should be inserted in an oblique or almost horizontal direction, between the cutis and the cuticle; and suffered to remain there for some seconds, in order that the matter may diffuse itself, and be lodged in the puncture. It will also be advisable to dip the lancet a second time in the virus, and wipe it repeatedly on the puncture. Some practitioners inoculate in one arm, others in both; but we would advise that not more than one puncture should be made in one arm, lest, from the concurrence of inflammation, or ulceration, injury to the patient, and disgrace to the practice, should ensue.

8. When matter is intended to be used within a day or two, it may be kept on the point of a lancet; but when it is not intended to be used for several days, it should be preserved on glass or thread, and moistened with cold or tepid water at the time of insertion. When it is to be kept for a considerable time, it may be prudent to exclude air, by applying two pieces of glass charged with the fluid, and dried face to face to each other, and wrapping them up in goldbeater's skin. Care must be taken not

to dry the matter before a fire, nor to keep it in a warm place; for it is eafily decompofed by heat. For the fame reafon, the glaffes muft not be cemented with fealing-wax.

9. The mode of inoculating with thread has given rife to a multitude of errors; either from the incifion or the foreign fubftance contained in it, producing fuppuration or digeftion; which have been miftaken for the vaccine difeafe. On this account, where recent matter cannot be procured on a lancet, glafs is the beft vehicle for thofe who are not well verfed in the practice. The vaccine fluid has proved effective after being kept feveral months; but no prudent perfon will ever truft to fuch virus, where that which is more recent can be obtained.

10. Cow-pock matter, taken at a late period of the difeafe, has been known to excite a genuine puftule, well marked in all its characters; but in other inftances it has proved delufive, and only produced a fpurious puftule. It is therefore incumbent on every medical man to fhun this rock, on which fo many have already fplit.

11. No preparation is neceffary for vaccine inoculation; nor any medicine, in general, either during the courfe of the difeafe, if difeafe it may be called, or after. Should any other complaint occur, it ought to be treated in the fame manner as it would have been had not vaccine inoculation been inftituted. No cathartics ought to be given at the decline of the difeafe; for they will only ferve to debilitate the patient, and are not indicated by the nature of the vaccine affection. No alteration of diet is requifite, unlefs temporary fever, diarrhœa, conftipation, or other accidental fymptom, fhould arife.

12. Particular care fhould be taken not to rupture the veficle, either by wafhing the arm, or any other kind of friction; by tight clothes, or any other caufe whatever. Should the veficle be broken, in fpite of all our precautions, the fame care is requifite in the treatment of the fore as if it proceeded from variolous inoculation or any other caufe. If the ulceration be fuperficial, faturnine applications are commonly fufficient. In fome inftances the emplaftrum refinæ fpread on linen effects a cure; in others, a poultice of bread and milk, with lard, is neceffary. It ought to be laid down as a rule, that the local difeafe, which is in general the only difeafe to be attended to in this practice, fhould never be flighted.

CHAP. XI. Of the CONSEQUENCES arising from SHARP-POINTED METALLIC SUBSTANCES taken into the STOMACH.

In the courſe of this work a variety of inſtances occur in which miſchievous effects have been produced by the ſwallowing of foreign bodies, either accidentally, or under a ſuppoſition that no evil would ariſe from the practice. We have not failed to record, in the caſual inſtances alluded to, whatever practical hints ſeemed deſerving of attention; but we have thought it our duty on ſuch occaſions to mark, in terms of adequate reprobation, the ignorant practice of ſwallowing cherry ſtones, damaſcene ſtones, &c. which ſome do even under an idea that they *contribute to digeſtion*. Children, following this pernicious example in their elders, or induced by mere wantonneſs and bravado, fall into the ſame practices. *Swallowing pins* is alſo ſtill more common to children, and perhaps ariſing from the example of thoſe mothers whom they ſee in the habit of putting pins, for convenience, into their mouths. To lay down any preciſe rule for the guidance of the practitioner in ſuch caſes is, perhaps, impoſſible, as the treatment muſt depend on the nature and circumſtances of the accident. When foreign bodies are fairly paſſed into the ſtomach, the probability of their being brought up again is very little, and the attempt perhaps unadviſable, on other accounts. To haſten their deſcent may be equally hazardous and inexpedient; and, on theſe accounts, in many ſuch accidents we are obliged to truſt to nature, who, happily for the human kind, has reſources, in ſuch caſes, which cannot but excite our wonder and aſtoniſhment. Thus, needles, and other ſmall ſharp-pointed bodies, paſſed into the ſtomach, or even penetrating the ſurface from without, have travelled all over the body unknown to the patient, and preſented themſelves at ſome unexpected part; from whence, by a ſlight ſurgical operation, they have been removed. We ſhall ſelect a few caſes, from which, poſſibly, ſome uſeful hints may be derived: at leaſt the ingenious idea of diſſolving metallic ſubſtances in the ſtomach ſeems well worth imitating in ſimilar inſtances. A caſe of iron nails diſſolved in the human ſtomach, by means of the nitric acid, without any bad conſequences, is related in the Memoirs of the Medical Society of London, by Dr. Harriſon.

Case I.—" George Hall, aged about twenty-three years, complains of pricking pains in his ſtomach, which hurt him upon motion, and eſpecially on bending or ſtooping forward. In an erect poſture he is pretty eaſy; but walking upon a pavement, or on a hard uneven road, gives him great uneaſineſs. Yeſterday, May the 5th, he incautiouſly ſwallowed two nails, and a conſiderable portion of another. To theſe he imputes the complaint at his ſtomach. From his deſcription, they are made of caſt

iron, are about an inch in length, and have large heads and very ſharp points. One, it appears, ſtuck in the œſophagus, and was forcibly thruſt into his ſtomach by the probang. This operation, which was performed immediately after the accident, gave him great pain, and was followed by a vomiting of coagulated blood. He has not been ſick ſince yeſterday—has had a natural ſtool to-day. In other reſpects he enjoys a good ſtate of health.

(No. 60.) ℞ Acid. nitros.* ʒi.
Aquæ font. ℥j. m.
Capiat ʒij. ſtatim ex aquæ puræ cochl. j. amplo.

" In a few minutes after taking the acid, he felt a ſlight griping in the ſtomach, which left him without ſickneſs, after two or three eructations of wind.

(No. 61.) Capiat ʒij. m. ex aquæ calidæ ℥j. ſed prius adde tinct. opii gutt. x.
Repetatur doſis iſtiuſmodi ſexies de die et nocte.

" Tueſday, May 6, 1794. According to my deſire, he has confined himſelf to a light farinaceous diet, and feels pretty eaſy at his ſtomach. He has taken the medicine regularly, and it occaſions neither pain nor ſickneſs. Pulſe, belly, and urine, regular. —Let the doſe of nitric acid be gradually and cautiouſly increaſed, till it occaſion ſome inconvenience. Continue the tincture of opium.

(No. 62.) ℞ Elect. e ſenn. ʒij.
Pulv. jalap. ʒß.
M. f. Elect. de quo glutiat quantitatem nucis moſchatæ mane, ſi alvus aſtricta ſit, et pro re nata, repetatur portio idonea.

" Thurſday, May 8. On this day in the afternoon he increaſed his doſe from 120 to 130 drops. In a few minutes afterwards he fell down in a fit, which was attended with convulſions, and an abolition of ſenſe, for nearly an hour. Since then he has only taken 120 drops. They give him no uneaſineſs or pain. Yeſterday and to-day the drops have occaſioned only a ſmall eructation of wind. Before Thurſday he never took them without belching air ſeveral times. Upon recovering from his fit, he declared that a nail had eſcaped from his ſtomach, and that he was ſenſible of its progreſſive motion towards the anus. Yeſterday he felt a great deal of pain in the lower part of his body, for ſeveral hours, which went away on his voiding one of the nails by ſtool. It is very rough and uneven, with ſeveral deep holes in various places. The point, with about one-ſixth of an inch from the ſmall end, is quite conſumed, and the head is alſo much waſted. His ſtomach is now very eaſy, and he feels none of the

* The ſpecific gravity of the acid of nitre given of by Dr. Harriſon was 1,35.

pricking pains that were formerly so troublesome upon the slightest motion.

"May 10. Since Saturday afternoon he has not been troubled with wind after taking the nitric acid, nor has he felt the smallest pricking in his stomach. In proportion as these symptoms disappeared the acid has produced more powerful effects. The third dose on Sunday was followed by such a violent and continual hiccough, that he could get little sleep or rest, and was obliged to walk about the greatest part of the night. Yesterday he was much easier, and to-day there is still less of the hiccough. He has discontinued the acid since Sunday at noon, and is desired not to take any more, without further orders. His appetite is unimpaired, but he has not indulged much in solid diet. Pulse, body, and urine, natural.

(No. 63.) Capiat gutt. x. tinct. opii puri ex quovis vehiculo idoneo ter, quater, vel sæpius, si sit necesse de die et nocte.

"May 13. His hiccough is entirely gone; he thinks himself quite recovered, and has been at work several days.

"May 20. Though the greatest attention has been paid to his fæces since the accident, he has not discovered any appearance of the other nail; nor has he felt the smallest uneasiness in his stomach or bowels from the time that the hiccough left him.

"June 30. He has enjoyed an uninterrupted state of good health ever since the last report. Nothing has been seen of the nail, nor has he felt any uneasiness from it.

"May 5, 1795."

The whole quantity of diluted nitric acid taken by the patient was as follows:—

On Tuesday, ℨvij. at four times.
Wednesday, ℥iß. at six doses.
Thursday, ℥iß. and twenty drops, at ditto.
Friday, ditto ditto, ditto.
Saturday, ditto ditto, ditto.
Sunday, ℨvj. at three doses.

In all he swallowed of it seven ounces, five drachms, and twenty drops.

"When I was consulted in the case of George Hall," says Dr. Harrison, "I found myself much at a loss for a method of treatment that promised to be successful, without injuring the stomach or some other part of the alimentary tube. The size and pointed form of the nails deterred me from every attempt to remove them by vomits, or purgative medicines. To increase or disturb the actions of the first passages seemed to me extremely dangerous, so long as these foreign bodies were lodged any-where in the stomach or intestinal canal. For, on a careful examina-

tion of similar nails, it appeared to me, that their sharp points were more likely to be forced into the coats of these delicate organs, than expelled from them by violent means. Every endeavour of this kind therefore appeared to be attended with so much uncertainty and danger, that I was discouraged from the trial; nor did I expect more success from oily and mucilaginous medicines. It occurred to me that a cure might be undertaken by chemical agents, with less hazard to the patient, and greater prospect of success, than by any other remedies. Impressed with this idea, I made choice of the nitric acid for the purpose; and, from the result of this experiment, I am inclined to recommend it, in similar cases, to the attention of medical practitioners. Experience has proved, that diluted nitric acid may be taken int- the stomach, and repeated in certain doses, without any detriment to the human frame; but I was of opinion, that here it might be administered in greater quantities, because I conceived that its proper action as an acid would be restrained and altered by its chemical union with the particles of iron in the patient's stomach. And in this I am inclined to believe my opinion was well founded; for during the first three days the medicine never produced any violent symptoms. Eructations of an elastic fluid were the only consequence; and this I assume as a strong proof that a combination was then forming in the stomach, between the acid and nails. For whenever these substances are mixed together out of the body, a separation of nitrous, and perhaps of azotic gas, never fails to take place, which continues to be extricated so long as they act upon each other. In this manner I conclude the copious eructations were produced on exhibiting the solvent, till, by taking an increased quantity, he became afflicted with convulsions, and, in this state, protruded the fragment of one nail into the intestines. From this period, the evolution of air was less considerable, and the effects of the acid more powerful. This may be collected from the reports, and affords another argument that the acid actually combined with the iron; for it is an established fact, that the operation of acid bodies is weakened by the chemical union. In confirmation of this opinion, I might adduce many compound salts in the materia medica; but the fact is so well established, that I think it unnecessary to enter further into the subject. But probably the great diminution of bulk in the nail that was voided, and the patient's having felt no subsequent uneasiness, will appear to afford the most complete evidence that the other nail was dissolved in the stomach. Such a combination, according to the laws of chemistry, necessarily involves the complete loss of aggregation in the nail, and the production of a new compound.

" That nitrated iron would be the result of the operation, struck me forcibly, when I first determined on this mode of

treatment, and increaſed my embarraſſment; for, as I was unacquainted with the operation of this ſubſtance on the nerves of the ſtomach, I was afraid it might be attended with pernicious conſequences. To guard againſt theſe, I adminiſtered the doſe myſelf, and charged the patient to apply to me for directions, provided he afterwards experienced any violent or new ſymptom from taking the mixture. With theſe cautions, which were repeated at every ſubſequent viſit, I was obliged, from his reſidence in the country, to confide to himſelf the immediate management of his caſe; and he, anxious to obtain a ſpeedy cure, continued the uſual quantity after the hiccough had ſupervened; and, from my permitting him at a former period to increaſe the nitric acid in a gradual manner, he imprudently ventured to take ten additional drops of it at the next doſe.

"To this inattention I impute the epileptic paroxyſm, and alſo the ſingultus under which he laboured ſeveral days after the acid had been diſcontinued, and the original complaint removed. Had he been more cautious, I flatter myſelf that a cure would have been obtained, without the occurrence of any unpleaſant ſymptom.

"Iron has a diſpoſition to unite with moſt acids; and therefore, it may appear a little extraordinary that I ſhould prefer the nitric acid before ſome others, that are known to produce harmleſs combinations with this metal. The vitriolic acid has the moſt powerful attraction for iron, and forms with it a ſubſtance well known in medicine and the arts; but this compound, inſtead of diffuſing itſelf ſpeedily through the incumbent fluid, and thereby giving an opportunity for the action of freſh particles of the acid, reſts upon the iron like a cruſt or film, and thus defends it, in a great meaſure, from the further action of ſolvents. I believe the nitric will be found to act more briſkly upon iron than any other acid, and to conſtitute with it a ſaline compound, that has a greater diſpoſition to diffuſe itſelf through the ſurrounding vehicle, than any other preparation of this metal. A few comparative trials lately inſtituted with different acids confirm this opinion, and encourage me to give it a decided preference on ſimilar occaſions. But, as theſe experiments are not yet ready for publication, they ſhall be made the ſubject of another eſſay.

"For theſe reaſons I was induced to prefer the nitric acid to every other ſolvent, and the event of this trial ſeems to juſtify my choice; and as my only intention in relating this caſe was a deſire to be uſeful, I ſubmit the ſtatement to an indulgent public, in the hope that it may prove ſerviceable to others.

"Practical writers have recorded numerous inſtances of metallic bodies being ſwallowed, and occaſioning to the ſufferers no ſmall degree of uneaſineſs and alarm. To be enabled to moderate

them on rational grounds, muft afford the higheft gratification to a benevolent phyfician; and if the practice recommended in this paper be found to fucceed on further trial, it may encourage an attempt to remove other offending matters, by the operation of chemical agents. Pins, needles, &c. and coins of gold, filver, and copper, of various fizes, have often remained in the ftomach for a great length of time; and, in fome inftances, their retention has occafioned very diftreffing fymptoms, terminating in fatal confequences. In fuch cafes, I perceive no objection to a prudent endeavour being made to diffolve any of them, when their removal cannot be fafely confided to other medicines, or when the trial has not been productive of the wifhed-for relief.

"When we refolve to adminifter an acid with this intention, we muft be determined in our choice by the nature of the metallic matter. For the attraction between acids and metals prefents fuch a variety of interefting particulars, that to enumerate them here would feduce me beyond the limits of a fingle effay, and lead to an enquiry, which I conceive does not properly belong to *a medical* differtation."

The following cafe, fhewing the effect of *Pins fwallowed*, which appears in the Medical and Phyfical Journal, was communicated by Mr. Adams, of Rochefter.

Case II.—"A girl, fourteen years old, was fuddenly feized with fuch violent fpafms about the larynx, the fides of the cheft, and the diaphragm, that it was feared fhe would foon expire. So quick was the recurrence of thofe fpafms, that fhe could neither eat nor drink. She complained of a ball afcending from the ftomach into the throat, and there exciting the fpafms.

"Her breathing was difficult, fhort, and attended with a hiffing. Her countenance was flufhed. Her eyes were fwollen; and the tunica conjunctiva was fomewhat inflamed. Her languor and difinclination to move were extreme. She had an averfion to food of all forts, and even to drink. Her body was rather coftive.

"She fpat a mucus of a bluifh green colour, which tafted, fhe faid, very difagreeably: but fhe could not be made to compare the tafte to any other. The fpitting was fomewhat profufe. She never flept for many days and nights; and there was alfo a flight cough.

"I ordered an enema, gave her kali faturated with lemon juice, and the camphor mixture, with T. Fœtida, and applied a large blifter to the pit of the ftomach. Thefe medicines procured no relief. I then gave pills, with camphor and opium, and applied a plafter of opiate confection to the larynx. All feemed in vain, the girl grew weaker and weaker, and death feemed to approach by rapid ftrides.

"I then requefted the opinion of Dr. Vaughan on fo fingular a cafe. As there was once an inclination to vomit, it was

encouraged; but without any good effect. To obviate costiveness, induced by the opium, the powder of scammony, with calomel, was given; and forty drops of tincture of opium after its operation. Every enquiry as to the rise of the disease was made of the girl and her friends, but for a long time nothing to direct us could be detected in their answers.

"At length, considering particularly the mucus discharged so constantly, the girl was asked, if she could recollect having swallowed any thing uncommon?—To which she answered; that six months ago, as nearly as she could guess, she swallowed two pins: but she did not think them the cause of her complaint, as she had never felt any pain or inconvenience from them. She added further, that she was certain they had passed from her by stool, as she had felt them pricking the anus.

"It was concluded, that the mucus owed its green colour to the pins, and that they, or one of them, had not been voided.

"A vomit was in consequence given again; and, strange to tell, the two pins were discharged by the mouth: corroded indeed, but in the proper form, and only bent to almost a right angle."

In the Memoirs of the Medical Society of London we have the case of a young lady, who swallowed a knife, without its being attended with any disagreeable consequences. The case is related by Mr. Wheeler.

Case III.—A young lady, about nine years of age, being at play with a small knife in her mouth, accidentally swallowed it.

The knife, when clasped, measured in length more than two inches, and in breadth above half an inch, and yet passed the œsophagus almost insensibly; so much so, that the attendants were doubtful of its being swallowed, till they had made every search for it to no purpose.

"Her friends being much alarmed," says Mr. Wheeler, "I was sent for immediately, and found my young patient entirely free from pain or apprehension.

"Though her situation appeared to me to be attended with some danger, I endeavoured to alleviate the anxiety of her friends, and recommending all possible attention to be used in search of the knife, prescribed a cooling regimen, with the use of laxative oleaginous medicines. In other respects trusting the expulsion to nature.

"This method produced two stools daily, and yet three days elapsed without any discovery being made; but on the morning of the fourth day the knife was voided by stool, with as little pain as it had been swallowed: the young lady continued perfectly easy, as well during the passage of the knife as afterwards.

"Soon after the above, I was informed of a school-boy having swallowed a small brass padlock; ashamed of the circumstance,

he did not mention it till ſome time after the accident, and in this interval it was probably voided by ſtool. On enquiry, he has ſince aſſured me, that neither pain nor any other inconvenience attended the ſwallowing it, but from that time to the preſent he has enjoyed a perfect ſtate of health."

This caſe ſhews the poſſibility, at leaſt, of very irregular bodies paſſing the inteſtinal canal without producing any diſagreeable effects. When ſuch happen to be detained, however, it muſt be deſirable to effect their ſolution by the means recommended by Dr. Harriſon; and the queſtion that occurs for the practitioner's conſideration, is, whether, at all events, and in the *firſt inſtance*, the acid ſhould not be reſorted to; as the probability of expulſion by the natural efforts will not be leſſened by purſuing that courſe.

THE END.

HEADS OF THE CASES OF LABOUR

IN

THE FIFTH VOLUME.

PRETERNATURAL LABOUR.

PLURALITY OF CHILDREN.

MONSTROUS BIRTHS.

HYSTEROTOMY.

INDEX

TO

THE FIFTH VOLUME.

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A GENERAL INDEX

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FORMULÆ.

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F.

A TABLE OF THE PROPORTIONS OF MERCURY AND OPIUM IN THE DIFFERENT COMPOSITIONS IN THE LONDON AND EDINBURGH PHARMACOPOEIAS.

		IN	CONTAINS
Balf. anodyn. .	*Edinb.*	grs. 30	Opii gr. 1.
Confect. opiata .	*Lond.*	grs. 36	Opii gr. 1.
Elect. japonic. .	*Edinb.*	grs. 193	Opii gr. 1.
Elect. thebaic. .	*Edinb.*	grs. 97	Opii gr. 1.
Elix. paregoric. .	*Edinb.*	grs. 68	Opii gr. 1.
Emplaft. amoniac. cum hydrarg.	. *Lond.*	℥5	Hydrarg. ℥1.
Emplaft. litharg. cum hydrarg.	. *Lond.*	℥5	Hydrarg. ℥1.
Emplaft. ex hydrarg.	*Edinb.*	℥3⅔	Hydrarg. ℥1.
Pilul. ex hydrarg.	. *Lond.*	grs. 2½	Hydrarg. gr. 1.
Pilul. ex hydrarg.	. *Edinb.*	grs. 4	Hydrarg. gr. 1.
Pilul. ex opio	. *Lond.*	grs. 5	Opii gr. 1.
Pilul. Plummer.	. *Edinb.*	grs. 2⅔	Calomel. gr. 1.
Pilul. thebaic.	. *Edinb.*	grs. 10	Opii gr. 1.
Pulv. e creta comp. cum opio	*Lond.*	grs. 44	Opii gr. 1.
Pulv. e fcamon. cum calomel.	*Lond.*	grs. 4	Calomel. gr. 1.
Pulv. ipecac. comp.	*Lond.*	grs. 10	Opii gr. 1.
Pulv. opiat. . .	. *Lond.*	grs. 10	Opii gr. 1.
Pulv. fudorific. .	. *Edinb.*	grs. 11	Opii gr. 1.
Tinct. opii . .	. *Lond.*	grs. 13	Opii gr. 1.
Tinct. opii camph.	. *Lond.*	grs. 260	Opii gr. 1.
Tinct. thebaic. .	. *Edinb.*	grs. 12	Opii gr. 1.
Trochifi*Bechic. c. op.	*Edinb.*	grs. 55	Opii gr. 1.
Ung. calc. hydrarg. alb.	*Edinb.*	℥1	Calc. hydrarg. alb. grs. 4⅔.
Ung. citrinum .	. *Edinb.*	℥1	Hydrarg. nitrat. grs. 4.
Ung. ex hydrarg.	. *Edinb.*	℥5	Hydrarg. ℥1.
Ung. hydrarg. fort.	. *Lond.*	℥2	Hydrarg. ℥1.
Ung. hydrarg. mit.	. *Lond.*	℥5	Hydrarg. ℥1.
Ung. hydrarg. nitrat.	*Lond.*	℥1	Hydrarg. nitrat. grs. 4.

* Thefe troches are not unfrequently ordered with double the quantity of opium, and kept in the fhops under that form.

A
GENERAL POSOLOGICAL TABLE.

A.

		DOSES.
Acetum Scillæ	*Vinegar of Squills*	gtt. 10 ad gtt. 50.
Acidum muriaticum	*Muriatic Acid*	gtt. 15...gtt. 40.
——— vitriolicum dilutum	*Diluted Vitriolic Acid*	gtt. 10...gtt. 30.
Æther vitriolicus	*Vitriolic Æther*	gtt. 10...gtt. 100
Aloe ſocotrina	*Socotrine Aloes*	gr. 15...ſcr. 1.
Alumen	*Alum*	gr. 6...gr. 12.
Ammonia præparata	*Prepared Ammonia*	gr. 5...ſcr. 1.
Ammoniacum	*Gum Ammoniacum*	gr. 10...gr. 15.
Antimonium	*Crude Antimony*	ſcr. 1...dr. 1.
——— calcinatum	*Calcined Antimony*	gr. 15...ſcr. 2.
——— tartariſatum	*Tartariſed Antimony*	gr. 1...gr. 6.
——— vitrificatum	*Vitrified Antimony*	gr. 2...gr. 10.
Aqua ammoniæ	*Water of Ammonia*	gtt. 10...gtt. 30.
——— acetatæ	*Water of acetated Ammonia*	dr. 2...dr. 6.
—— anethi	*Dill-ſeed Water*	un. 1...un. 2.
—— calcis	*Lime Water*	un. 4...lb. ½.
—— cinnamomi	*Cinnamon Water*	un. 2...un. 4.
—— fœniculi	*Fennel Water*	un. 2...un. 4.
—— kali	*Water of prepared Kali*	gtt. 20...gtt. 30.
——— puri	*Water of pure Kali*	gtt. 10...gtt. 30.
—— menthæ piperitidis	*Peppermint Water*	un. 2...un. 4.
Aqua pimento	*Pimento Water*	un. 2...un. 4.
—— pulegii	*Pennyroyal Water*	un. 2...un. 4.
—— Roſæ	*Roſe Water*	ad libitum.
Arabicum Gummi	*Gum Arabic*	dr. 1...dr. 2.
Aſafœtida		gr. 10...ſcr. 2.

B.

Balſamum Canadenſe	*Canada Balſam*	gr. 15...gr. 30.
——— copaivæ	*Balſam of Copaiva*	gtt. 20...gtt. 40.
——— peruvianum	*Balſam of Peru*	gr. 6...gr. 25.
——— tolutanum	*Balſam of Tolu*	ſcr. 1...dr. 1.

C.

Calomelas	*Calomel*	gr. 3...gr. 10.
Camphora	*Camphor*	gr. 3...ſcr. 1.
Cantharis	*Cantharides*	gr. ¼...gr. 4.
Cardamomum	*Cardamom ſeeds*	gr. 5...gr. 10.
Caſcarilla	*Caſcarilla Bark*	ſcr. ½...dr. 1.
Caſtoreum	*Caſtor*	gr. 3...ſcr. 1.
Catechu		gr. 15...ſcr. 2.
Chamœmelum	*Camomile*	ſcr. ½...dr. 1.
Cicuta	*Hemlock*	gr. 5...ſcr. 1.
Cinchona	*Peruvian Bark*	ſcr. 1...dr. 2.
Columba		gr. 10...ſcr. 1.

		DOSES.
Confectio aromatica	*Aromatic Confection*	gr. 15..ſcr. 2.
——— opiata	*Confection of Opium*	gr. 5..ſcr. 1.
Conſerva abſinthii maritimi	*Conſerve of Sea Wormwood*	dr. 2..un. $\frac{1}{2}$.
——— ari	*Conſerve of Cuckowpint*	ſcr. 1..dr. 1.
——— corticis aurantii	*Conſerve of Orange Peel*	ad libitum.
——— cynoſbati	*Conſerve of Hips*	ad libitum.
Conſerva lujulæ	*Conſerve of Woodſorrel*	dr. 4..un. 1.
——— pruni ſylveſtris	*Conſerve of Sloes*	dr. 1..dr. 3.
——— roſæ rubræ	*Conſerve of Red Roſes*	dr. 2..un. 1.
——— ſcillæ	*Conſerve of Squills*	ſcr. 1..dr. 1.
Contrayerva	. . . . . .	gr. 10..dr. $\frac{1}{2}$.
Coriandrum	*Coriander Seeds*	ſcr. 1..dr. 1.
Cornu cervi uſtum	*Burnt Hartſhorn*	dr. $\frac{1}{2}$..dr. 2.
Creta	*Chalk*	gr. 15..ſcr. 1.

D.

Decoctum cinchonæ	*Decoction of Peruvian Bark*	un. 2..un.
——— cornu cervi	*Decoction of Hartſhorn*	un. 4..lb. $\frac{1}{2}$
——— hordei	*Simple Decoction of Barley*	un. 4..lb. $\frac{1}{2}$
——————— compoſitum	*Compound Decoction of Barley*	un. 4..lb. $\frac{1}{2}$
——— ſarſaparillæ	*Simple Decoction of Sarſaparilla*	un. 4..lb $\frac{1}{2}$
——————— compoſitum	*Compound Decoction of Sarſaparilla*	un. 4..lb. $\frac{1}{2}$
——— ulmi	*Decoction of Elm Bark*	un. 4..lb. $\frac{1}{2}$
Digitalis	*Fox-glove*	gr. $\frac{1}{3}$..gr. 2.

E.

Elaterium	*The inſpiſſated juice of the Wild Cucumber*	gr. $\frac{1}{2}$..gr. 3
Electuarium caſſiæ	*Electuary of Caſſia*	dr. 1..dr. 6
——— ſcammonii	*Electuary of Scammony*	ſcr. 1..dr. 1
——— ſennæ	*Electuary of Senna*	dr. $\frac{1}{2}$..dr. 4
Extractum cacuminis geniſtæ	*Extract of Broom Tops*	ſcr. 1$\frac{1}{2}$..dr. 1$\frac{1}{2}$
——— caſcarillæ	*Extract of Caſcarilla*	gr. 10..ſcr. 1$\frac{1}{2}$
——— chamæmeli	*Extract of Camomile*	gr. 10..ſcr. 2
——— cinchonæ	*Extract of Peruvian Bark*	gr. 10..ſcr. 1.
——————— cum reſinâ	*Extract of Bark with the Reſin*	gr. 10..ſcr. 1$\frac{1}{2}$.
——— colocynthidis compoſitum	*Compound Extract of Bitter Apple*	gr. 5..gr. 25
——— gentianæ	*Extract of Gentian*	gr. 10..ſcr. 1$\frac{1}{2}$
——— glycyrrhizæ	*Extract of Liquorice*	dr. 1..dr. 4
——— hæmatoxyli	*Extract of Logwood*	gr. 10..gr. 2
——— hellebori nigri	*Extract of Black Hellebore*	gr. 2..gr. 10.
——— jalapii	*Extract of Jalap*	gr. 10..ſcr. 1.
——— papaveris albi	*Extract of White Poppies*	gr. 1..gr. 5.
——— rutæ	*Extract of Rue*	gr. 10..ſcr. 1.
——— ſabinæ	*Extract of Savin*	gr. 10..dr. $\frac{1}{2}$.
——— ſennæ	*Extract of Senna*	gr. 10..ſcr. 1$\frac{1}{2}$.

F.

Ferri rubigo	*Ruſt of Iron*	gr. 6..ſcr. 1$\frac{1}{2}$.
Ferrum ammoniacale	*Ammoniacal Iron*	gr. 2..gr. 10.
——— tartariſatum	*Tartarized Iron*	gr. 2..gr. 10.
——— vitriolatum	*Vitriolated Iron*	gr. 1..gr. 6.
Filix	*Male Fern Root*	ſcr. 1$\frac{1}{2}$..un. $\frac{1}{2}$.
Flores benzoes	*Flowers of Benzoin*	gr. 10..ſcr. 1.
——— ſulphuris	*Flowers of Sulphur*	ſcr. 1..ſcr. 1$\frac{1}{2}$.

G.

Gambogia	*Gamboge*	gr. 2..gr. 12.

		DOSES.
Geniſta	*Broom Tops*	ſcr. 1.. dr. 1.
Gentiana	*Gentian*	gr. 10.. dr. 1.
Ginſeng	. . . .	gr. 10.. dr. 1.
Glycyrrhiza	*Liquorice Root*	dr. 4.. dr. 6.
Guaiacum	. . . .	ſcr. 1½.. dr. 1.
Gummi reſina	*Gum reſin*	gr. 6.. ſcr. 1½.

H.

Hæmatoxylum	*Logwood*	gr. 10.. dr. 1.
Helleborus niger	*Black Hellebore*	gr. 1.. gr. 5.
Hydrargyrus	*Quickſilver*	un. ½.. un. 4.
—— acetatus	*Acetated Quickſilver*	gr. 1.. gr. 10.
—— calcinatus	*Calcined Quickſilver*	gr. ½.. gr. 2.
—— cum cretâ	*Quickſilver with Chalk*	gr. 5.. ſcr. 1.
—— muriatus	*Muriated Quickſilver*	gr. ⅛.. gr. ½.
—— cum ſulphure	*Sulphurated Quickſilver*	ſcr. 1.. dr. 1.
—— ſulphuratus ruber	*Red ſulphurated Quickſilver*	gr. 10.. ſcr. 1½.
—— vitriolatus	*Vitriolated Quickſilver*	gr. ½.. gr. 4.

I.

Infuſum gentianæ compoſitum	*Compound Infuſion of Gentian*	un. 2.. un. 4.
—— roſæ	*Infuſion of Roſes*	un. 2.. lb. ½.
—— ſennæ	*Simple Infuſion of Senna*	un. 2.. un. 4.
Infuſum ſennæ tartariſatum	*Tartariſed Infuſion of Senna*	un. 2.. un. 4
Ipecacuanha	. . . .	gr. 10.. ſcr. 1.
Iris	*Florentine Orris*	ſcr. 1.. dr. 1.

J.

Jalapium	*Jalap*	gr. 7.. ſcr. ½.
Juniperus	*Juniper Berries*	ſcr. 1.. dr. 1.

K.

Kino	. . . .	gr. 10.. ſcr. 1½
Kali præparatum	*Prepared Kali*	gr. 8.. ſcr. 1.
—— acetatum	*Acetated Kali*	ſcr. 1.. dr. 1.
—— tartariſatum	*Tartariſed Kali*	dr. 2.. dr. 6.
—— vitriolatum	*Vitriolated Kali*	dr. 2.. dr. 6.

L.

Lac ammoniaci	*Milk of Ammoniacum*	dr. 2.. un. 1.
—— amygdalæ	*Milk of Almonds*	un. 2.. un. 6.
Liquor volatilis cornu cervi	*Volatile Liquor of Hartſhorn*	ſcr. 1½.. dr. 2.

M.

Magneſia alba	*White Magneſia*	ſcr. 1.. dr. 2.
—— uſta	*Burnt Magneſia*	ſcr. 1½.. dr. 1.
—— vitriolata	*Vitriolated Magneſia*	dr. 2.. dr. 6.
Manna	. . . .	un. ½.. un. 2.
Mel acetatum	*Acetated Honey*	dr. 1.. dr. 2.
—— roſæ	*Roſe Honey*	dr. 1.. dr. 2.
—— ſcillæ	*Squill Honey*	ſcr. 1½.. dr. 2.
Millepeda	*Woodlice*	dr. 1.. dr. 3.
Miſtura camphorata	*Camphorated Mixture*	un. 2.. un. 4.
—— cretacea	*Chalk Mixture*	un. 2.. un. 4.

		DOSES.
Miftura mofchata	*Mufk Mixture*	dr. 4.. un. 2
Mucilago amyli	*Mucilage of Starch*	dr. 1.. un. 1
——— arabici gummi	*Mucilage of Gum Arabic*	dr. 1.. un. 1
——— feminis cydonii mali	*Mucilage of Quince-feed*	dr. 1.. un. 1
——— tragacantha	*Mucilage of Tragacanth*	dr. 1.. un. 1
Myrrha	*Myrrh*	gr. 10.. fcr. 1½

N.

Natron præparatum	*Prepared Natron*	gr. 10.. fcr. 1½.
——— tartarifatum	*Tartarifed Natron*	dr. 4.. un. 1.
——— vitriolatum	*Vitriolated Natron*	dr. 6.. un. 1.
Nitrum purificatum	*Purified Nitre*	gr. 5.. fcr. 1.

O.

Oleum amygdalæ	*Oil of Almonds*	dr. 4.. un. 1.
——— juniperi baccæ	*Oil of Juniper-berries*	gtt. 2.. gtt 10.
——— lavendulæ	*Oil of Lavender*	gtt. 2.. gtt. 5.
——— lini	*Oil of Linfeed*	dr. 4.. un. 1.
——— olivæ	*Oil of Olives*	dr. 4.. un. 1.
——— ricini	*Caftor Oil*	dr. 2.. un. 1.
——— finapeos	*Oil of Muftard*	dr. 4.. un. 1.
Opium purificatum	*Purified Opium*	gr. ½.. gr. 2.
Oftreorum teftæ	*Oyfter-fhells*	fcr. 1.. dr. 1½.
Oxymel colchici	*Oxymel Colchici*	fcr. 1.. fcr. 1½.
——— fcillæ	*Oxymel of Squills*	fcr. 1½.. dr. 1.

P.

Pilula aloes compofita	*Compound Pills of Aloes*	gr. 10.. fcr. 1.
——— cum Myrrhâ	*Pills of Aloes with Myrrh*	gr. 6.. gr. 18.
——— galbani compofita	*Compound Galbanum Pills*	gr. 10.. fcr. 1½.
——— hydrargyri	*Quickfilver Pills*	gr. 6.. fcr. 1.
——— opii	*Opium Pills*	gr. 2.. gr. 8.
——— fcillæ	*Squill Pills*	gr. 10.. fcr. 1.
Pimento	*All-fpice*	gr. 5.. fcr. 1.
Pulvis aloes cum canellâ	*Aloetic Powder with canella*	gr. 10.. fcr. 1.
——— cum ferro	*Aloetic Powder with Iron*	gr. 8.. gr. 18.
——— cum guaiaco	*Aloetic Powder with Guaiacum*	gr. 10.. fcr. 1.
——— antimonialis	*Antimonial Powder*	gr. 3.. gr. 6.
——— aromaticus	*Aromatic Powder*	gr. 5.. fcr. 1.
——— e chelis cancrorum compofitus	*Compound Powder of Crab's Claw*	fcr. 1½.. dr. 1.
——— contrayervæ compofitus	*Compound Powder of Contrayerva*	gr. 15.. fcr. 1½.
——— cretæ compofitus	*Compound Powder of Chalk*	gr. 10.. fcr. 1.
——— compofitus cum opio	*Compound Powder of Chalk with Opium*	gr. 10.. fcr. 2.
——— ipecacuanhæ compofitus	*Compound Powder of Ipecacuanha*	gr. 18.. fcr. 1½.
——— Myrrhæ compofitus	*Compound Powder of Myrrh*	gr. 15.. fcr. 1½.
——— opiatus	*Opium Powder*	gr. 5.. fcr. 1.
——— fcammonii	*Compound Powder of Scammony*	gr. 10.. fcr. 1.
——— compofitus cum aloe	*Powder of Scammony with aloes*	gr. 5.. gr. 10.
Pulvis fcammonii cum calomelane	*Powder of Scammony with Calomel*	gr. 8.. gr. 16.
——— fennæ compofitus	*Compound Powder of Senna*	fcr. 1.. fcr. 2.
——— tragacanthæ compofitus	*Compound Powder of Tragacanth*	fcr. 1.. dr. 1.
Pyrethrum	*Pellitory of Spain*	gr. 2.. gr. 6.

Q.

Quaffia	*Quaffia Wood*	gr. 5.. fcr. 1.
Quercus	*Oak Bark*	gr. 6.. fcr. 1

R.

		DOSES.
Raphanus ruſticanus	*Horſe-radiſh*	ſcr. 1..dr. 1.
Rhabarbarum	*Rhubarb*	gr. 15..ſcr. 2.
Ruta	*Rue*	gr. 15..ſcr. 1.

S.

Sal ammoniacus	*Sal Ammoniac*	gr. 8..ſcr. 1.
—— cornu cervi	*Salt of Hartſhorn*	gr. 10..ſcr. 1.
—— ſuccini purificatus	*Purified Salt of Amber*	gr. 5..gr. 15.
Sapo	*Soap*	ſcr. 1½..dr. 4.
Sarſaparilla	. . . .	ſcr. 1..ſcr. 1½.
Saſſafras	. . . .	ſcr. 1..dr. 1.
Scammonium	*Scammony*	gr. 5..ſcr. 1.
Scilla exſiccata	*Dried Squills*	gr. 1..gr. 3.
—— recens	*Freſh Squills*	gr. 5..gr. 10.
Scordium	*Water-germander*	ſcr. 1..dr. 1.
Seneka	. . . .	ſcr. 1..ſcr. 2.
Senna	. . . .	ſcr. 1..dr. 1.
Serpentaria	. . . .	gr. 10..ſcr. 2.
Simarouba	*Simarouba Bark*	gr. 16..ſcr. 1½.
Sinapi	*Muſtard-ſeed*	dr. 1..dr. 3.
Spermaceti	. . . .	ſcr. 1..dr. 1.
Spigelia	*Indian Pink*	gr. 10..ſcr. 1.
Spina cervinæ	*Buckthorn*	ſcr. 1½..dr. 2.
Spiritus ætheris vitriolici	*Vitriolic Spirit of Æther*	gtt. 20..gtt. 60.
———— vitriolici compoſitus	*Compound Spirit of vitriolic Æther*	gtt 20..gtt. 60.
———— nitroſi	*Nitrous Spirit of Æther*	gtt. 20..gtt. 60.
—— ammoniæ	*Spirit of Ammonia*	ſcr. 1..ſcr. 2.
——— compoſitus	*Compound Spirit of Ammonia*	ſcr. 1½..dr. 1.
——— fœtidus	*Fœtid Spirit of Ammonia*	ſcr. 1..ſcr. 2.
——— ſuccinatus	*Succinated Spirit of Ammonia*	gr. 10..ſcr. 1.
—— aniſi compoſitus	*Compound Spirit of Aniſeed*	dr. 1..dr. 4.
—— carui	*Spirit of Carraway*	dr. 1..dr. 4.
—— cinnamomi	*Spirit of Cinnamon*	dr. 1..dr. 4.
—— juniperi compoſitus	*Compound Spirit of Juniper*	dr. 1..dr. 4.
—— lavendulæ	*Spirit of Lavender*	dr. 1..dr. 4.
——— compoſitus	*Compound Spirit of Lavender*	ſcr. 1½..dr. 2.
—— menthæ piperitidis	*Spirit of Peppermint*	dr. 1..dr. 3.
——— ſativæ	*Spirit of Spearmint*	dr. 1..dr. 4.
—— nucis moſchatæ	*Spirit of Nutmeg*	dr. 1..dr. 4.
—— pimento	*Spirit of Pimento*	dr. 1..dr. 3.
—— pulegii	*Spirit of Pennyroyal*	dr. 1..dr. 3.
—— raphani compoſitus	*Compound Spirit of Horſe-radiſh*	dr. 1..dr. 3.
Spongia uſta	*Burnt Sponge*	ſcr. 1..dr. 1.
Stanni pulvis	*Powder of Tin*	dr. 3..dr. 6.
Styrax	*Storax*	gr. 10..ſcr. 1.
Succinum præparatum	*Prepared Amber*	ſcr. 1½..dr. 1.
Succus aconiti ſpiſſatus	*Inſpiſſated Juice of Henbane*	gr. 1..gr. 4.
—— baccæ ſambuci ſpiſſatus	*Inſpiſſated Juice of Elder-berry*	un. ½..un. 2.
—— cicutæ ſpiſſatus	*Inſpiſſated Juice of Hemlock*	gr. 2..gr. 10.
—— cochleariæ compoſitus	*Compound Juice of Scurvy-graſs*	un. 2..un. 6.
—— ribis nigri	*Inſpiſſated Juice of Black Currant*	un. ½..un. 2.
Sulphur antimonii præcipitatum	*Precipitated Sulphur of Antimony*	gr. 2..gr. 5.
—— præcipitatum	*Precipitated Sulphur*	dr. 1..dr. 2.
Syrupus altheæ	*Syrup of Marſh-mallow*	dr. 1..dr. 2.
—— papaveris albi	*Syrup of White Poppies*	dr. 4..un. 1.
——— erratici	*Syrup of wild Poppy*	dr. 2..dr. 4.
—— roſæ	*Syrup of Roſes*	dr. 2..dr. 4.
—— ſpinæ cervinæ	*Syrup of Buckthorn*	dr. 2..dr. 4.
—— violæ	*Syrup of Violets*	dr. 2..dr. 4.
—— zingiberis	*Syrup of Ginger*	dr. 2..dr. 4.

T.

		DOSES.
Tanacetum	*Tanſey*	ſcr. 1½.. dr. 1.
Tartari cryſtalli	*Cryſtals of Tartar*	dr. 2.. un. ½.
Tinctura aloës	*Tincture of Aloes*	dr. 4.. un. 1.
——— compoſita	*Compound Tincture of Aloes*	ſcr. 1½.. dr. 2.
——— aſafœtidæ	*Tincture of Aſafœtida*	ſcr. 1.. dr. 2.
——— balſami peruviani	*Tincture of Balſam of Peru*	ſcr. 1½.. dr. 2.
Tinctura balſami tolutani	*Tincture of Balſam of Tolu*	ſcr. 1½.. dr. 2.
——— benzoës compoſita	*Compound Tincture of Benzoe*	dr. 1.. dr. 2.
——— cantharidis	*Tincture of the Spaniſh Fly*	gr. 10.. dr 1.
——— cardamomi	*Tincture of Cardamom*	dr. 1.. dr. 3.
——— ——— compoſita	*Compound Tincture of Cardamom*	dr. 1.. dr. 3.
——— caſcarillæ	*Tincture of Caſcarilla*	dr. 1.. dr. 4.
——— caſtorei	*Tincture of Caſtor*	ſcr. 1.. dr. 1½.
——— catechu	*Tincture of Catechu*	dr. 2.. dr. 3.
——— cinchonæ	*Tincture of Bark*	dr. 1.. dr. 4.
——— ——— compoſita	*Compound Tincture of Bark*	dr. 2.. dr. 4.
——— ——— ammoniata	*Ammoniated Tincture of Bark*	ſcr. 1½.. dr. 2.
——— cinnamomi	*Tincture of Cinnamon*	dr. 1.. dr. 3.
——— ——— compoſita	*Compound Tincture of Cinnamon*	dr. 1.. dr. 3.
——— colombæ	*Tincture of Colomba*	dr. 1.. dr. 3.
——— ferri ammoniacalis	*Tincture of Ammoniacal Iron*	ſcr. 1.. dr. 2.
——— ferri muriati	*Tincture of Muriated Iron*	gtt. 10.. gtt. 60.
——— galbani	*Tincture of Galbanum*	dr. 1.. dr. 3.
——— gentianæ compoſita	*Compound Tincture of Gentian*	dr. 2.. dr. 3.
——— guaiaci ammoniata	*Ammoniated Tincture of Guaiacum*	dr. 1.. dr. 4.
——— hellebori nigri	*Tincture of Black Hellebore*	ſcr. 1.. dr. 1.
——— jalapii	*Tincture of Jalap*	dr. 1.. dr. 3.
——— myrrhæ	*Tincture of Myrrh*	dr. 1.. dr. 3.
——— opii	*Tincture of Opium*	gtt. 20.. gtt. 2.
——— ——— camphorata	*Camphorated Tincture of Opium*	gtt. 30.. gtt. 60.
——— rhabarbari	*Tincture of Rhubarb*	dr. 4.. un. 2.
——— ——— compoſita	*Compound Tincture of Rhubarb*	dr. 4.. un. 2.
——— ſabinæ compoſita	*Compound Tincture of Savin*	gtt. 20.. gtt. 40.
——— ſcillæ	*Tincture of Squills*	gtt 20.. gtt. 60.
——— ſennæ	*Tincture of Senna*	dr. 2.. un. 1.
——— ſerpentariæ	*Tincture of Serpentaria*	dr. 1.. dr. 2.
——— valerianæ	*Tincture of Valerian*	dr. 1.. dr. 3.
——— ——— ammoniata	*Ammoniated Tincture of Valerian*	ſcr. 1.. dr. 2.
——— zingiberis	*Tincture of Ginger*	dr. 1.. dr. 2.
Tormentilla	*Tormentil Root*	gr. 10.. ſcr. 2.
Tragacantha	*Tragacanth*	gr. 10.. dr. 1.

U.

Valeriana	*Valerian*	ſcr. 1.. dr. 2.
Vinum aloes	*Wine of Aloes*	dr. 6.. un. 1.
——— antimonii	*Antimonial Wine*	gtt. 20.. gtt. 50.
——— ——— tartariſati	*Wine of Tartariſed Antimony*	gtt. 20.. dr. 50.
——— ferri	*Wine of Iron*	dr. 1.. dr. 4.
——— ipecacuanhæ	*Ipecacuanha Wine*	dr. 1.. dr. 4.
——— rhabarbari	*Wine of Rhubarb*	dr. 4.. un. 2.
Uva urſi	*Bear's Wortleberry*	ſcr. 1.. dr. 1.

Z.

Zincum calcinatum	*Calcined Zinc*	gr. 3.. gr. 10.
——— vitriolatum purificatum	*Purified Vitriolated Zinc*	gr. 5.. ſcr. 1.

A

TABLE OF THE NAMES

ALTERED IN THE LATER EDITIONS OF THE

PHARMACOPŒIAS

OF

LONDON AND EDINBURGH.

Old Names.	*New Names.*
A.	
ACETUM ſcilliticum	ACETUM ſcillæ, *Lond.*
Æthiops mineralis	Hydrargyrus cum ſulphure, *Lond.*
Aqua aluminoſa Bateana	Aqua aluminis compoſita, *Lond.*
calcis ſimplex	calcis, *Lond.*
cinamomi ſimplex	cinamomi, *Lond.*
——— ſpirituoſa	Spiritus cinamomi, *Lond.*
hordeata	Decoctum hordei, *Lond.*
juniperi compoſita	Spirit. juniperi compoſitus, *Lond.*
menthæ piperitidis ſimplex	Aqua menthæ piperitidis, *Lond.*
——— ſpirituoſa	Spirit. menthæ piperitidis, *Lond.*
———vulgaris ſimplex	Aqua menthæ ſativæ, *Lond.*
———ſpirituoſa	Spiritus menthæ ſativæ, *Lond.*
nucis moſchatæ	nucis moſchatæ, *Lond.*
piperis Jamaicenſis	Aqua pimento, *Lond.*
pulegii ſimplex	pulegii, *Lond.*
———ſpirituoſa	Spirit. pulegii, *Lond.*
raphani compoſita	raphani compoſitus, *Lond.*
roſarum damaſcenarum	Aqua roſæ, *Lond.*
ſapphirina	cupri ammoniati, *Lond.*
ſeminum anethi	anethi, *Lond.*
aniſi compoſita	Spiritus aniſi compoſitus, *Lond.*
carui	carui, *Lond.*
vitriolica camphorata	Aqua zinci vitriolati cum camphora, *Lond.*
Argenti vivi purificatio	Hydrargyri purificatio, *Lond.*
Axungiæ porcinæ curatio	Adipis ſuillæ præparatio, *Lond.*
B.	
Balſamum ſulphuris Barbadenſe	Petroleum ſulphuratum, *Lond.*
———ſimplex	Oleum ſulphuratum, *Lond.*
traumaticum	Tinct. Benzoës compoſita, *Lond*
anodynum	Linimentum anodynum, *Edinb.*
ſaponaceum	ſaponaceum, *Edinb.*
Butyrum antimonii	Causticum antimoniale, *Edinb.*

Old Names.	*New Names.*
C.	
Calx antimonii	Antimonium calcinatum, *Lond.*
Causticum antimoniale	muriatum, *Lond.*
commune fortius	Calx cum kali puro, *Lond.*
lunare	{ Argentum nitratum, *Lond.* Sal argenti, *Edinb.*
Ceratum album	Ceratum spermatis ceti, *Lond.*
citrinum	resinæ flavæ, *Lond.*
epuloticum	lapidis calaminaris, *Lond.*
Chalybis rubigo præparata	Ferri rubigo, *Lond.*
Cinnaberis factitia	Hydrarg. sulphuratus ruber, *Lond.*
Confectio cardiaca	{ Confectio aromatica, *Lond.* Electuarium cardiacum, *Edinb.*
Confectio japonica	Electuarium japonicum, *Edinb.*
Cornu cervi calcinato	Cornu cervi usto, *Lond.*
Crocus metallorum	Crocus antimonii, *Edinb.*
D.	
Decoctum album	Decoctum cornu cervi, *Lond.*
commune pro clystere	pro enemate, *Lond.*
pectorale	hordei compositum, *Lond.*
E.	
Electuarium lenitivum	Electuarium e senna, *Lond.*
Elixir aloës	Tinctura aloës composita, *Lond.*
myrrhæ compositum	sabinæ composita, *Lond.*
paregoricum	opii camphorata, *Lond.*
proprietatis	Elixir aloës, *Edinb.*
sacrum	ex aloes et rheo, *Edinb.*
salutis	Tinctura sennæ composita, *Edinb.*
Emplastrum ex ammoniaco cum mercurio	Emplastrum ammoniaci cum hydrargyro, *Lond.*
antihystericum	fœtidum, *Edinb.*
attrahens	ceræ, *Lond.*
cephalicum	picis Burgundicæ, *Lond.*
commune	lithargyri, *Lond.*
adhesivum	cum resina, *Lond.*
cum gummi	cum gummi, *Lond.*
cum mercurio	cum hydrargyro, *Lond.*
e cymino	cumini, *Lond.*
roborans	thuris, *Lond.*
e sapone	saponis, *Lond.*
stomachicum	ladani, *Lond.*
vesicatorium	cantharidis, *Lond.*
Emulsio communis	Lac amygdalæ, *Lond.*
Ens veneris	Flores martiales, *Edinb.*
Extractum carthartieum	Extractum e colocynthide compositum, *Lond.*
thebaicum	Opium purificatum, *Lond.*
F.	
Ferri rubigo	Ferri limatura præparata, *Edinb.*
Flores benzoini	Flores benzoës, *Lond.*

Old Names.	*New Names.*
Flores martiales	Ferrum ammoniacale, *Lond.*
zinci	Calx zinci, *Lond.*
Fotus communis	Decoctum pro fomento, *Lond.*
H.	
Hiera picra	Pulvis aloeticus, *Lond.*
I.	
Infuſum amarum ſimplex	Infuſum gentianæ compoſitum, *Lond.*
ſennæ commune	ſennæ tatariſatum, *Lond.*
Julepum e camphora	Miſtura camphorata, *Lond.*
e creta	cretacea, *Lond.*
e moſcho	mochata, *Lond.*
L.	
Laudanum liquidum ——	Tinctura thebaica, *Edinb.* / opii, *Lond.*
Linimentum album	Unguentum ſpermatis ceti, *Lond.*
ſaponaceum	Linimentum ſaponis, *Lond.*
volatile	ammoniæ, *Lond.*
Lixivium ſaponaceum	Aqua kali puri, *Lond.*
tartari	kali, *Lond.*
M.	
Mel Ægyptiacum	Oxymel æruginis, *Lond.*
roſaceum	Mel roſæ, *Lond.*
Mercurius calcinatus	Hydrargyrus calcinatus, *Lond.*
corroſivus ſublimatus	muriatus, *Lond.*
——— ruber	nitratus ruber, *Lond.*
dulcis ſublimatus	Calomelas, *Lond.*
emeticus flavus	Hydrargyrus vitriolatus, *Lond.*
præcipitatus albus	Calx hydrargyri alba, *Lond.*
——— ruber	Mercurius corroſivus ruber, *Edinb.*
N.	
Nitrum vitriolatum	Kali vitriolicum, *Lond.*
O.	
Oleum animale	Oleum e cornubus rectificatum, *Edinb.*
petrolei Barbadenſis	petrolei, *Lond.*
terebinthinæ æthereum	terebinthinæ rectificatum, *Lond.*
Opium colatum	Opium purificatum, *Lond.*
Oxymel ſciliticum	Oxymel ſcillæ, *Lond.*
P.	
Philonium Londinenſe	Confectio opiata, *Lond.*
Pilulæ aromaticæ	Pulvis aloeticus cum guaiaco, *Lond.*
gummoſæ	Pilulæ e gummi, *Lond.*

Old Names.	*New Names.*
Pilulæ cocciæ	Pilulæ ex colocynthide cum aloe, *Edinb.*
mercuriales	ex hydrargyro, *Lond. Edinb.*
pacificæ	Pilulæ thebaicæ, *Edinb.*
rufi	ex aloe cum myrrha, *Lond.*
Pulvis e bolo compoſitus	Pulvis e creta compoſitus, *Lond.*
——cum opio	—— cum opio, *Lond.*
cephalicus	ſternutatorius, *Edinb.*
e ceruſſa compoſitus	e ceruſſa, *Lond.*
Doveri	ipecacuanhæ comp. *Lond.*
ſternutatorius	aſari compoſitus, *Lond.*
R.	
Rob baccarum ſambuci	Succus baccæ ſambuci ſpiſſatus, *Lond. Edinb.*
S.	
Saccharum ſaturni ——	{ Ceruſſa acetata, *Lond.* { Sal plumbi, *Edinb.*
Sal abſinthii	Kali, *Lond.*
ammoniacus volatilis	Alkali volatile ex ſale ammoniaco, *Edinb.*
catharticus Glauberi ——	{ Natron vitriolatum, *Lond.* { Soda vitriolata, *Edinb.*
diureticus	Kali acetatum, *Lond.*
martis	Ferrum vitriolatum, *Lond.*
rupellenſis	Soda tartariſata, *Edinb.*
tartari	Kali, *Lond.*
vitrioli	Zincum vitriolatum, *Lond.*
volatilis ſalis ammoniaci	Ammonia, *Lond.*
Species aromaticæ	Pulvis aromaticus, *Lond.*
Spiritus cornu cervi	Liquor volatilis cornu cervi, *Lond.*
lavendulæ compoſitus	Tinctura lavendulæ, *Lond.*
————ſimplex	Spiritus lavendulæ, *Lond.*
nitri dulcis ——	{ Spiritus ætheris nitroſi, *Lond.* { Acidum nitri vinoſum, *Edinb.*
——Glauberi	Acidum nitroſum, *Lond. Edinb.*
ſalis ammoniaci	Aqua ammoniæ, *Lond.*
————cum calce vivo	Alkali volatile cauſticum, *Edinb.*
————dulcis	Spiritus ammoniæ, *Lond.*
—— marini Glauberi	Acidum muriaticum, *Lond.*
—— vinoſus camphoratus	Spiritus camphoratus, *Lond.*
—— vitrioli dulcis ——	{ Spiritus ætheris vitriolici, *Lond.* { Acidum vitriolicum vinoſum, *Edinb.*
————tenuis ——	{ Acidum vitriolicum dilutum, *Lond.* { Acidum vitriolicum tenue, *Edinb.*
volatilis aromaticus	Spiritus ammoniæ compoſitus
—— fœtidus	—— fœtidus, *Lond.*
Succi ſcorbutici	Succus cochleariæ compoſitus, *Lond.*
Sulphur auratum antimonii	Sulphur antimonii præcipitatum, *Edinb.*
Syrupus ex althæa	Syrupus althææ, *Lond.*
e corticibus aurantiorum	corticis aurantii, *Lond.*
balſamicus	tolutanus, *Lond.*
e meconio	papaveris albi, *Lond.*
roſarum ſolutivus	roſæ, *Lond.*

Old Names.	*New Names.*
T.	
Tabellæ cardialgiæ	Trochisci e creta, *Lond.*
Tartarum emeticum —	Antimonium tartarisatum, *Lond.*
	Tartarus antimonialis, *Edinb.*
regeneratum	Alkali fixum vegetabile acetatum, *Edinb.*
solubile —	Kali tartarisatum, *Lond.*
	Alkali fixum vegetabile tartarisatum, *Edinb.*
vitriolatum —	Kali vitriolatum, *Lond.*
	Alkali fixum vegetabile vitriolatum *Edinb.*
Tinctura amara	Tinctura gentiani composita, *Lond.*
antiphthisica	saturnina, *Edinb.*
aromatica	cinnamomi composita *Lond.*
fœtida	asæ fœtidæ, *Lond.*
guaiaci volatilis	guaiaci, *Lond.*
ipecacuanhæ	Vinum ipecacuanhæ, *Edinb.*
japonica	Tinctura catechu, *Lond.*
martis in spiritu salis	ferri muriati, *Lond.*
melampodii	hellebori nigri, *Lond.*
rhabarbari spirituosa	rhabarbari, *Lond.*
————vinosa	Vinum rhabarbari, *Lond.*
rosarum —	Infusum rosæ, *Lond.*
	rosarum, *Edinb.*
sacra —	Vinum aloës, *Lond.*
	Vinum aloeticum, *Edinb.*
stomachica	Tinctura cardamomi composita, *Lond.*
Trochisci Bechici albi	Trochisci amyli, *Lond.*
————nigri	glycyrrhizæ, *Lond.*
Turpethum minerale	Mercurius flavus, *Edinb.*
V.	
Vinum antimoniale	Vinum antimonii, *Lond.*
chalybeatum	ferri, *Lond.*
U.	
Unguentum album	Ung. ceræ, *Lond.*
album	e cerussa, *Edinb.*
antipsoricum	e sulphure, *Lond.*
basilicum flavum	resinæ flavæ, *Lond.*
cœruleum	ex hydrargyro, *Edinb.*
————fortius	hydrargyri, *Lond.*
————mitius	———— mitius, *Lond.*
e mercurio præcip.	calcis hydrargyri albæ, *Lond.*
saturninum	cerussæ acetatæ, *Lond.*
simplex	adipis suillæ, *Lond.*
ad vesicatoria	cantharidis, *Lond.*

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